



SMEC INTERNAL REF. 30018043

Detailed Site Investigation

Austral Public School upgrade

Client Reference No. 30018043
Prepared for Department of Education
3 February 2025

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Important Notice

This report is confidential and is provided solely for the purposes of providing a Detailed Site Investigation (with respect to contamination) at Austral Public School, 205 Edmondson Avenue, Austral, 2179 (the Site). This report is provided pursuant to a Consultancy Agreement between SMEC Australia Pty Limited ("SMEC") and Department of Education (DoE), under which SMEC undertook to perform a specific and limited task for DoE. This report is strictly limited to the matters stated in it and subject to the various assumptions, qualifications and limitations in it and does not apply by implication to other matters. SMEC makes no representation that the scope, assumptions, qualifications and exclusions set out in this report will be suitable or sufficient for other purposes nor that the content of the report covers all matters which you may regard as material for your purposes.

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This report has relied on information provided by DoE and presented in previous reports/data. We have therefore relied that the information contained in those reports is a true and accurate reflection of the site conditions or materials tested and that the conclusions made in those reports are reasonable and made on a sound scientific basis. It was not within the scope of SMEC to review and critically evaluate or validate the results of the previous reports. Each report has its own set of limitations and those limitations also apply to the interpretations made by SMEC. SMEC do not take responsibility for errors, omissions or negligence in the use of the information contained in previous reports or data made available for this report.

The findings of this this report are the result of methodologies used in accordance with normal practices and standards. We consider that they represent a reasonable interpretation of the general conditions of the site at the time they were assessed, but under no circumstances, can it be considered that these findings represent the actual state of the site in all areas. This report applies to the Site at the point in time it was observed and/or tested and does not apply if changes to the site are made post that time.

Contents

Abbreviations and Acronyms.....	viii
Executive Summary	x
1. Introduction.....	1
1.1 General	1
1.2 Proposed Activity Description	1
1.3 Objectives.....	4
1.4 Definition of Contaminated Land	4
1.5 Scope of work.....	4
1.6 Published guidelines	4
2. Site Identification	5
2.1 Site location.....	5
2.2 Site condition and surrounding environment	8
3. Review of previous reports	11
3.1 WSP (2021a) Validation report: Austral Public-School Oval Excavation, 205 Edmondson Avenue, Austral	12
3.2 WSP (2021b) PFAS Environmental Site Assessment: Former NSW RFS Fire Station, 59th Avenue, Austral, NSW (DRAFT REPORT)	13
3.3 Terravale (2023) Human Health Risk Assessment (HHRA) of PFAS in Soil in On- and Off-site Areas of the Austral RFS Facility, 59 Ninth Street, Austral, NSW	18
4. Site history Summary	19
4.1 Site information and Site history data gaps	20
5. Preliminary Conceptual Site Model.....	21
6. Data Quality Objectives	23
7. Assessment Criteria	26
7.1 General	26
7.2 Health Investigation Levels (HILs) and Health Screening Levels (HSLs).....	26
7.2.1 Soil assessment criteria.....	26
7.3 Ecological Screening and Investigation Levels (EILs/ESLs).....	27
7.4 Management Limits.....	28
7.5 Asbestos Criteria.....	28
7.6 Aesthetic Criteria.....	28
7.7 Groundwater	28
8. Sampling Methodology.....	29
8.1 General	29
8.2 Excavation and Soil Sampling Procedure	30
8.3 Field and Laboratory Testing Schedule	30
8.4 Quality Assurance and Quality Control	30
8.4.1 Field QA/QC	31
8.4.2 Relative percentage difference (RPD).....	33
8.4.3 Laboratory QA/QC.....	33
8.4.4 QA/QC Summary	34
9. Field and Laboratory Results.....	35

9.1	Subsurface Conditions	35
9.1.1	Staining and odours.....	35
9.1.2	Anthropogenic fill materials.....	36
9.1.3	Asbestos.....	36
9.1.4	Site walkover.....	38
9.1.5	Field soils screening for VOCs.....	39
9.1.6	Groundwater inflows.....	39
9.2	Laboratory Results.....	40
9.2.1	Health Criteria.....	40
9.2.2	Ecological Criteria.....	40
9.2.3	Management Limits.....	40
9.2.4	Aesthetic Criteria.....	40
10.	Discussion and Revised CSM	41
10.1	AEC 1 – Areas near former/existing building structures	41
10.2	AEC 2 - Historical on-site and offsite firefighting activities	41
10.3	AEC 3 - Whole Site from fill of unknown origin and/or quality	41
10.4	AEC 4 - Historical agricultural activities.....	42
10.5	AEC 5 - Septic Tanks.....	42
10.6	AEC 6 - On site historical farm dam sediments.....	42
10.7	Revised CSM	42
10.8	Duty to Report Contamination	45
11.	Conclusions.....	46
12.	Recommendations and Mitigation Measures.....	48
12.1	Recommendations.....	48
12.2	Mitigation Measures.....	49
13.	References.....	50

Appendices

Appendix A	Figures
Appendix B	Data Quality Indicators
Appendix C	Photographic Log
Appendix D	Calibration Certificates
Appendix E	Logs
Appendix F	Field Monitoring Results
Appendix G	Analytical Summary Tables
Appendix H	Laboratory Reports

Figures

Figure 1-1: Proposed Site Plan (Source Pedavoli Architects, Overall Site Plan (Rev B)).....	3
Figure 2-1 Aerial image of site (source: NearMap, taken 7 Sept 2023)	6
Figure 3-1 : WSP PFAS remediation area (Ref: WSP 2021a)	13
Figure 3-2: WSP (2021b) sampling locations within the southern portion of the school Site.....	17
Figure 9-1 – Location of potential ACM finds within TP08 and TP08 series n 'step-out' pits.	37
Figure 6-2 – Summary of stormwater flow pathway between the properties off-site to the south and the school Site.....	39
Figure 10-1: Potentially complete contamination source, pathway and receptor linkages	44
Table 12-1 Mitigation Measures	49

Tables

Table 2-1: Summary of Site information.....	7
Table 2-2 Summary of Site environmental setting (information sourced from SMEC 2023 PSI report).....	8
Table 3-1: Summary of WSP (2021b) PFAS in soil data.....	15
Table 5-1 Potentially complete contamination source, pathway and receptor linkages.....	22
Table 6-1 Data quality objectives.	23
Table 7-1 Physiochemical parameters to calculate site-specific EILs.	27
Table 7-2 Physiochemical parameters to calculate site-specific EILs.	28
Table 8-1 Sampling methodology.....	29
Table 8-2: Field duplicate sample.....	32
Table 9-1 Summary of subsurface conditions observed at test pit locations.	35
Table 10-1 Revised CSM and S-P-R Linkages.....	43

Abbreviations and Acronyms

Abbreviation / Acronym	Meaning
ACM	Asbestos Containing Material
AEC	Area of Environmental Concern
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
APS	Austral Public School
ASLP	Australian Standard Leaching Procedure
ASO	Asset Service Officer
ASS	Acid Sulphate Soils
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
BYD	Before You Dig
CEC	Cation Exchange Capacity
COC	Chain of Custody
CoPC	Contaminants of Potential Concern
CSM	Conceptual Site Model
DBYD	Dial before you dig
DoE	Department of Education
DQI	Data Quality Indicators
DQO	Data Quality Objectives
DSI	Detailed Site Investigation
EFSG	Education Facilities Standards and Guidelines
EIL/ESL	Ecological Investigation/Screening Levels
EPA	Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
FTE	Full time equivalent
HHRA	Human-Health Risk Assessment
HIL/HSL	Health Investigation/Screening Levels
LCC	Liverpool City Council
LCS	Laboratory Control Samples
LGA	Local Government Area
LNAPL	Light Non-Aqueous Phase Liquid
LOR	Limit of Reporting
LPG	Liquid Petroleum Gas
LPS	Laboratory-Prepared Spikes
MS	Matrix Spike
m bgl	Meters Below Ground Level

Abbreviation / Acronym	Meaning
NATA	National Association of Testing Authorities Australia
NEPC	National Environment Protection Council
NEPM	National Environment Protection (Assessment of Site Contamination) Measure
OCP	Organochlorinated Pesticide
OPP	Organophosphorus Pesticide
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PFAS	Per- and Poly-Fluoroalkyl Substances
PFHxS	Perfluorohexane Sulfonic Acid
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonic Acid
PID	Photo-Ionisation Detector
PQL	Practical Quantitation Limit
PS	Public School
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance/Quality Control
REF	Review of Environmental Factors
RFS	Rural Fire Service
RPD	Relative Percentage Difference
SAQP	Sampling, Analysis and Quality Plan
SOP	Standard Operating Procedure
SWL	Standing Water Level
TDS	Total Dissolved Solids
T&I SEPP	State Environmental Planning Policy (Transport and Infrastructure) 2021
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbon
UCL	Upper Confidence Limit
USCS	Unified Soil Classification System
VOC	Volatile Organic Compounds

Executive Summary

This Detailed Site Investigation (DSI) (with respect to contamination) has been prepared to support a Review of Environmental Factors (REF) for the Department of Education (DoE) for the upgrade of Austral Public School (APS) (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as “development permitted without consent” on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37 of the T&I SEPP.

The proposed activity is for the upgrades to the existing APS at 205 Edmondson Avenue, Austral, NSW, 2179 (the Site).

The purpose of this report is to provide information on site contamination to support the REF.

SMEC has previously carried out a Preliminary Site Investigation (PSI) for the Site (SMEC, 2023) which identified a range of potential Areas of Environmental Concern (AECs) and associated contamination sources based on the site history and site observations, as follows:

- AEC 1 - Areas near former/existing building structures from weathering and/or ineffective demolition of hazardous building materials
- AEC 2 - Historical on-site and offsite firefighting activities potentially involving per- and poly-fluoroalkyl substances (PFAS) containing firefighting foam
- AEC 3 - Whole Site from fill of unknown origin and/or quality. Also, several small suspected fill mounds were identified during a site walkover
- AEC 4 - Historical agricultural activities and potential application of pesticides for sports ovals onsite and off-site agricultural activities associated with poultry farms
- AEC 5 - Septic Tanks prone to overflowing during heavy rainfall. Off-site septic tanks belonging to residents in the southern portion of the site have been known to leak and flow onto the Site
- AEC 6 - On site historical farm dam sediments which may have received run-off from surrounding land and could have acted as a sink for contamination and fill.

The PSI concluded that intrusive investigations (i.e. a DSI) would be required.

The objectives of the Detailed Site Investigations (DSI) were to:

- Assess the potential for contamination to be present at the Site with respect to the proposed school upgrade works
- Provide recommendations on the suitability of the Site for the proposed activity
- Provide recommendations on the need for further investigations and/or management based on the findings.

The DSI included developing and executing a sampling, analysis and quality plan which included sampling soils from 44 sample locations across the Site using a combination of judgemental and systematic sampling to assess the previously identified Areas of Concern.

A summary of recorded exceedances is presented below:

- Laboratory analysis indicated that PFAS compounds exceeded the adopted human health criteria and ecological criteria within two test pits located proximal to the site's southern boundary and located within a stormwater run-off area inferred to be from the offsite Rural Fire Service (RFS) site. We understand that the School have now placed temporary fencing in this area to limit access to the locations where these exceedances were recorded as a temporary measure.

- Multiple fragments of suspected bonded asbestos containing material (ACM) fragments were observed within a test pit located adjacent the children's play area in the southern portion of the Site). Test pits were excavated stepping out from this area and additional ACM was identified. Two samples of ACM selected for analyses showed that both fragments contained chrysotile and amosite asbestos. The fragments observed were qualitatively assessed to represent both 'bonded asbestos' and friable (i.e. bonded ACM in poor condition).
- A single zinc exceedance was recorded above the adopted Site specific ecological criteria. The exceedance was not considered significant in the context of the proposed activity as per the lines of evidence discussed in this report.

We note that due to fieldwork omission, faecal coliforms analysis was not undertaken at AEC5 (Septic Tanks), therefore this AEC has not currently been fully assessed.

A revised conceptual site model was developed which indicates that there are plausible source-pathway-receptor linkages with respect to the PFAS and asbestos contamination identified. Works carried out on behalf of RFS by WSP and Terravale included a health risk assessment (Terravale, 2023), which concluded that:

- Risks are low and acceptable for primary school students, based on daily exposures to the maximum PFAS (PFOS+PFHxS) concentration detected in soil near the southern school boundary.
- Risks are low and acceptable for adult workers at the primary school, assuming daily exposures to the maximum PFAS (PFOS+PFHxS) concentration detected in soil near the southern school boundary.

Based on the results of the DSI and reports provided by DoE, further assessment along with possible remediation/management of the identified soil asbestos contamination will be required to make the Site suitable for the proposed activity. Further assessment should be carried out prior to construction.

Groundwater quality was not directly assessed in this investigation as it is unlikely to be intersected as part of proposed activity. Based on the observations and soil analytical results, the likelihood of widespread groundwater impact as a result of the former Site activities that would pose an unacceptable risk to either the proposed high school or nearby receptors is considered to be low (with the exception of PFAS). The Site is in an area that had previous agricultural related activities and some slightly elevated contaminant levels such as nutrients could be expected, but would be a broader diffuse source, rather than just solely related to the Site.

With respect to PFAS in groundwater, we consider that this is an issue related to offsite impacts which are being assessed and managed by Liverpool City Council and NSW Rural Fire Service. Whilst the proposed activity may not be adversely affected by PFAS in groundwater if works are not intersecting the water table, future risks and liabilities associated with the offsite source may need to be addressed between DoE and RFS.

Based on our review of the NSW EPA (2015) Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997, we infer that the contamination identified in its current form either does not meet the triggers for notification or requires further data to make this assessment.

Based on the results of this DSI SMEC consider that the Site can be made suitable from a contamination perspective for the proposed activity, subject to the recommendations below: .:

- DoE should consider if they are willing to accept reliance on work carried out by RFS. If this is considered acceptable, further assessment of the significance of the PFAS soil exceedances does not appear to be warranted. DoE should note that the presence of residual PFAS in soil, even though it may be below health/ecological criteria, could still impact the proposed activity financially (either now or in the future) due to potential increased costs in offsite soil disposal (if this is necessary) as it may affect the soil classification. DoE has indicated that RFS is proposing improvement works in the southern part of the school involving excavation to depths of between 0.3m and 0.5m to reduce the mass and potential for ongoing release of PFAS to provide environmental benefit only. We further understand it has been agreed that these works will be the responsibility of Liverpool City Council and RFS (as the PFAS source is from the RFS site adjacent to the school) and carried out under a suitable Remedial Action Plan (or similar), also prepared by Liverpool City Council and RFS.
- Consultation should be carried out with RFS in relation to preventing any further migration of PFAS to the school Site through either remediation or management. Addressing impacts at the school in isolation of removing or preventing migration from the offsite source Site could risk re-contamination.

- With regards to the asbestos identified in the children's play area, we understand that DoE engaged an appropriately licenced asbestos hygienist to clear the surface soils in this area for asbestos with respect to ongoing school activities in the interim. NSW Department of Education (DoE) arranged for a Site-Specific Asbestos Management Plan to also be developed to address DoE's obligations under the NSW Work Health and Safety Regulation 2017 and NSW Work Health and Safety Act 2011 as it relates to the presence of asbestos in grounds, by managing and minimising asbestos related health risks to personnel working on or visiting the site (WSP, 2023). Assessment of the clearance certificates and management plan is outside of SMEC's engagement. As some of the asbestos has been found at depths less than 0.5m and the exact historical source is not well known, further assessment of this area is recommended to assess the extent and degree of contamination prior to construction.
- Upgrade the septic system to prevent future overflows occurring including further assessment prior to or as part of the upgrade forming part of the proposed activity
- The density of investigation locations near existing and former historical structures (AEC 1) was generally low due to access from existing pavements and buildings. When details of known disturbance areas for the proposed activity are known, further assessment could be carried out prior to construction to target those areas to increase the confidence in the assessment and avoid unexpected finds, otherwise works could be managed through an unexpected finds procedure. We note that ACM can be difficult/costly to manage if later found post mixing into soil stockpiles as part of bulk earthworks
- Removal of all hazardous building materials from structures that require demolition in accordance with relevant regulations and codes along with adequate assessment and clearance prior to demolition to avoid introduction of contaminants to the ground.

1. Introduction

1.1 General

This Detailed Site Investigation (DSI) (with respect to contamination) has been prepared to support a Review of Environmental Factors (REF) for the Department of Education (DoE) for the upgrade of Austral Public School (APS) (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as “development permitted without consent” on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37 of the T&I SEPP.

The proposed activity is for the upgrades to the existing APS at 205 Edmondson Avenue, Austral, NSW, 2179 (the Site).

The purpose of this report is to provide information on site contamination to support the REF.

SMEC has previously carried out a Preliminary Site Investigation (PSI) for the Site (SMEC, 2023) which identified a range of potential Areas of Environmental Concern (AEC) based on the site history and site observations (a summary is presented in Section 3.3). The PSI concluded that *‘intrusive investigations will be required to assess and characterise the Site with respect to contamination, fill data gaps, develop the CSM and assess the need for remediation/management with respect to the proposed use of the Site during construction. This should be carried out by developing a Sampling, Analysis and Quality Plan and then implementing this plan through a Detailed Site Investigation (DSI)’*. Furthermore, the PSI recommended, *‘that reports relating to PFAS [Per- and Poly-Fluoroalkyl Substances] investigations both on and offsite be reviewed, if these can be made available as part of the next phase of investigation. We also recommend Council records be reviewed as part of closing out the identified data gaps’*.

Following submission of the PSI report to DoE, SMEC received additional reports for review, a summary of these additional reports is presented in Section 3.

This DSI was carried out in general accordance with our proposal (Ref: 360018043 VAR01, dated 31 March 2023). This report presents the DSI findings.

1.2 Proposed Activity Description

The proposed activity involves alterations and additions to the existing APS, including the following:

- Demolition of existing structures and removal of trees, as well as other site preparation works;
- The erection of a new 3-storey building comprising teaching spaces that includes 20 permanent teaching spaces and 3 support teaching spaces;
- Conversion of the first floor of Building B from a Library to staff annex (staff room) and minor modifications on the ground floor;
- Refurbishment and change of school function of Building I from classrooms to a Library;
- At-grade parking (57 new spaces, including 1 accessible space);
- New driveway and access gate from Edmondson Road;
- Erection of a substation within the site on the northern boundary;
- Upgrade of the sports field;
- Internal pathways, fencing, utility upgrades and associated works; and
- Off-site public domain improvements including retention and upgrading of the Kiss & Drop area and a temporary pedestrian road crossing on Tenth Avenue.

The intent of the activity is to allow for upgrades to APS that will provide a CORE 35 primary school compliant with the EFGS. The works will increase the capacity of the school from 681 students and 40 FTE teachers to 734 students and 64 FTE teachers, respectively. Furthermore, provision within the expanded 734 student capacity will be made for the creation of 30 support class students places.

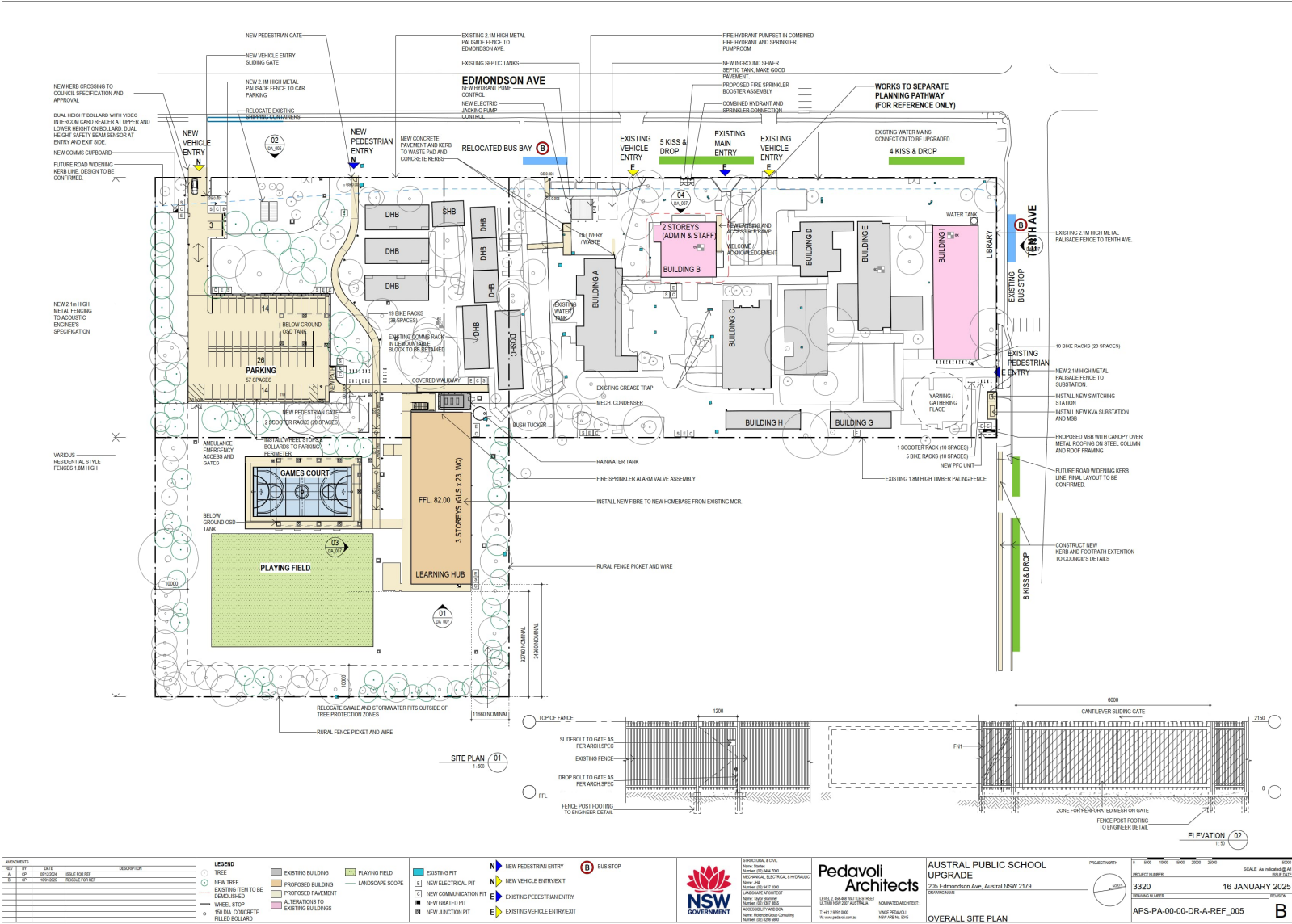


Figure 1-1: Proposed Site Plan (Source: Pedavoli Architects, Overall Site Plan (Rev B))

1.3 Objectives

The objectives of the Detailed Site Investigation (DSI) was to:

- Assess the potential for contamination to be present at the Site with respect to the proposed school upgrade works
- Provide recommendations on the suitability of the Site for the proposed activity
- Provide recommendations on the need for further investigations and/or management based on the findings.

1.4 Definition of Contaminated Land

The NSW Contaminated Land Management Act 1997 defines contamination of land as “the presence in, on or under the land of a substance at a concentration above the concentration at which the substance is normally present in, on or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment.”

1.5 Scope of work

The scope of the report has been prepared with reference to the policy, standards and guidelines outlined in Section 1.6. To fulfil the objective stated in Section 1.3, the following scope of works was undertaken:

- Developing of a Sampling, Analysis and Quality Plan/methodology
- Preparation of site and task specific Safe Working Method Statements (SWMS)
- Site walkover by a Senior Environmental Scientist
- Excavation of 29 test pits and 15 hand auger locations
- Collection of soil samples from test pit and hand auger locations followed by submission to a National Association of Testing Authorities (NATA) accredited laboratory for analysis of a suite of identified potential contaminants of concern
- Preparation of this report presenting the findings of the assessment and making conclusions and recommendations as per the objectives identified in Section 1.3 above.

1.6 Published guidelines

This DSI was prepared with reference to the following applicable published guidelines:

- Australian Standard AS4482.1-2005 Guide the investigation and sampling of site with potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds
- National Environment (Assessment of Site Contamination) Protection Measure (NEPM, 2013)
- NSW EPA (2022), Contaminated Land Guidelines - Sampling Design part 1 - application, NSW EPA (2014), Waste Classification Guidelines - Part 1: Classification of waste, dated November 2014
- NSW EPA (2020) Contaminated Land Guidelines: Consultants Reporting on Contaminated Land
- Heads of EPAs Australia and New Zealand (HEPA) (2020) PFAS National Environmental Management Plan V2.0
- State Environmental Planning Policy (Resilience and Hazards) 2021.

2. Site Identification

The information presented in Section 2 is sourced and summarised from the Preliminary Site Investigation (PSI) (SMEC, 2023).

2.1 Site location

APS is located at 205 Edmondson Avenue, Austral on the south-eastern corner of the intersection between Edmondson Avenue and Tenth Avenue. The Site has an area of 2.986 ha and comprises of 6 allotments, legally described as:

- Lot 1 DP 398105
- Lot 1 DP 398106
- Lot 1 DP 509613
- Lot 1 DP 512119
- Lot 2 DP 509613
- Lot 865 DP2475

The Site currently comprises an existing co-educational primary (K-6) public school with:

- 8 permanent buildings;
- 14 demountable structures;
- interconnected paths;
- covered walkways;
- play areas: and
- at-grade parking.

The Austral Community Pre-school is also located within the Site.

The existing buildings are clustered in the northern part of the Site, ranging between 1 to 2 stories in height. There is a sports oval in the south-eastern portion of the Site, and a densely vegetated informal play area located in the south-western portion of the site.

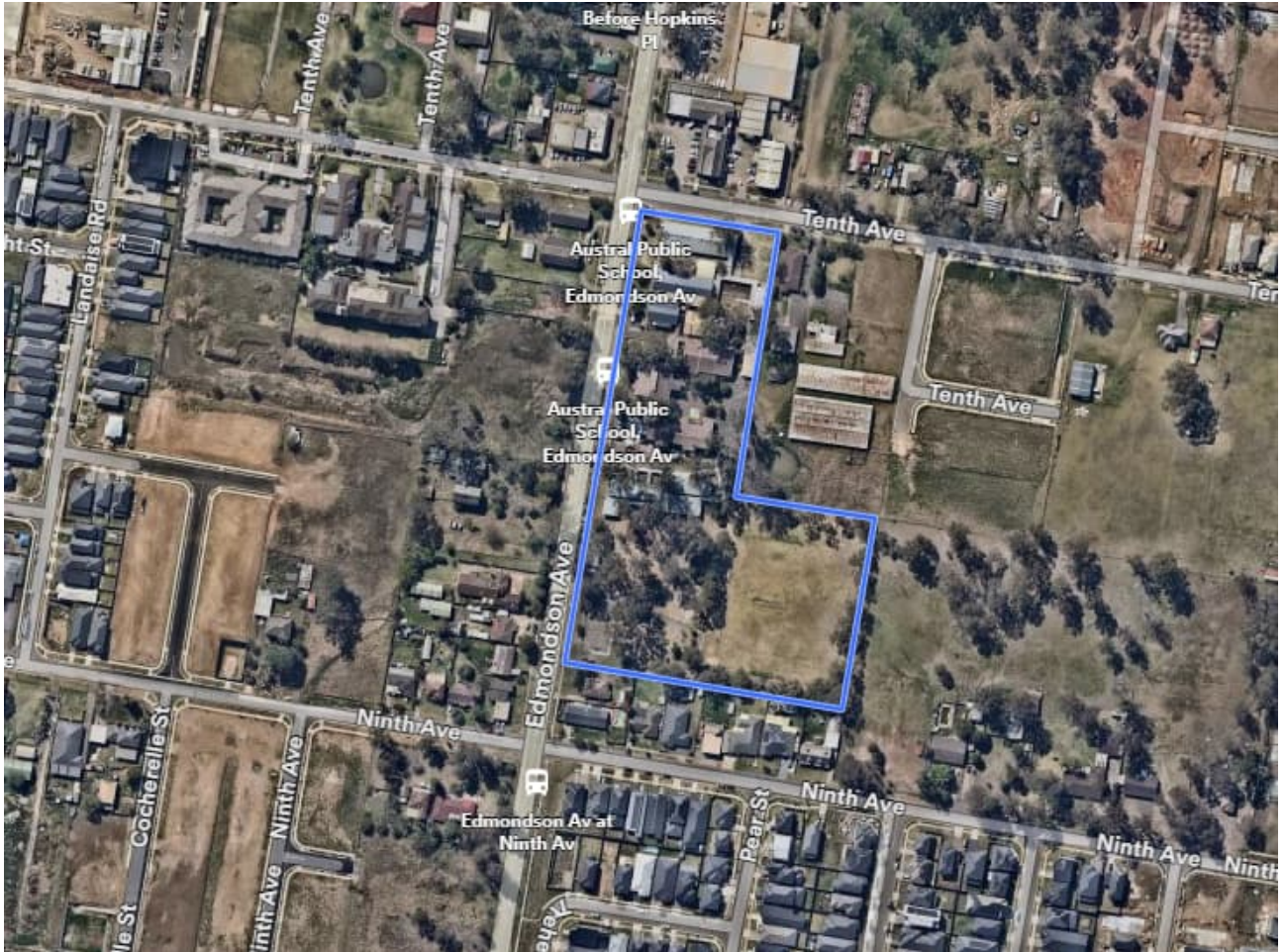


Figure 2-1 Aerial image of site (source: NearMap, taken 7 Sept 2023)

A summary of Site information is presented below in Table 2-1. The Site location and layout are provided in Figure 1 and Figure 2, Appendix A.

Table 2-1: Summary of Site information.

Title	Description
Address	205 Edmondson Avenue, Austral NSW, 2179
Title Identifiers	Lot 865 DP2475, Lot 1 DP398105, Lot 1 DP398106, Lot 1 & Lot 2 DP509613, Lot 1 DP512119
Area	Approximately 2.986ha
Land Owner	The Minister for Education and Early Learning
Local Government Area	Liverpool City Council
Zoning	SP2 Infrastructure (Educational Establishment) - <i>State Environmental Planning Policy (Precincts - Western Parkland City) 2021 - Sydney Region Growth Centres</i>
Current Land use	The Site is currently used as a local 'K-6' primary school including various school buildings, recreational areas, sports fields and sports courts. A non-government licenced pre-school also operates within Building D.
Proposed land use	DoE propose to upgrade the existing school by providing additional permanent teaching spaces and core facilities suitable for a capacity of 1,012 students or 44 permanent teaching spaces. Construction of: • Dual story amenities building • Games court • Parking area • Substation, MSB and septic tanks • Open play space • Demolition of several existing on-site structures.
Surrounding land use	North: Tenth avenue is orientated parallel with the Site's northern boundary. Immediately north of Tenth Avenue is a Neighbourhood Centre (B1) consisting of several commercial buildings and a motor service garage. Medium Density Residential (RE3) beyond. East: Immediately east of the northern portion of the Site is a residential property. Further east consists of a pond, several paddocks, structures including shipping containers and large elongated sheds (suspected to have previously been used as chicken sheds). Further east is a construction site with active earthworks which appeared to commence sometime between August and October 2021. A large open paddock is also located immediately east of the southern portion of the Site. South: Several residential properties and the Austral NSW Rural Fire Service Station (no longer used for firefighting operations) are located immediately south of the Site. Further residential properties are located beyond a road to the south. West: Edmondson Avenue is orientated parallel with the Site's western boundary. Several residential buildings, a local church and vacant land which includes evidence of grassed stockpiles are located beyond Edmondson Avenue to the west.

2.2 Site condition and surrounding environment

A summary of Site environmental setting is presented below in Table 2-2, additional information is available within the Preliminary Site Investigation (PSI) (SMEC, 2023).

Table 2-2 Summary of Site environmental setting (information sourced from SMEC 2023 PSI report).

Aspect	Detail
Topography and Landforms	Topography details were obtained from publicly available mapping with topographic contours shown in Figure 2, Appendix A, and from site observations. The sports field within the south-eastern portion of the Site are topographically lower in comparison to the surrounding landscape on the northern, eastern, and southern sides. The Site slopes gently downwards from the sports fields within the south-eastern portion of the Site to a low point located in the area just north of the existing tennis courts (refer to Figure 2, Appendix A). Based on topographic contour mapping, the northern and eastern portions of the Site appear to be at around 82-84m Australian Height Datum (AHD) sloping down to a low point in the south-western portion of the Site (78m AHD along western border). The Site appears to slope from the south-east corner (approximately 86m AHD) to the west (approximately 79m AHD).
Vegetation	During the Site walkover, trees were observed in the southern portion of the site around the perimeter of the sports fields and scattered around the play equipment in the south western portion of the Site. The majority of the southern portion of the Site is grassed. Trees in the northern portion of the Site were generally found in gardens or mulched areas. The field engineer who attended the Site walkover did not report any apparent signs of dead or stressed vegetation. Satellite imagery from August 2020 shows a large tree to be toppled over in the southern portion of the Site. The tree has since been removed. Reference to Remnant Vegetation of the Cumberland Plain: NSW Office of Environment and Heritage (dated 07 July 2022), Remnant Vegetation of the Cumberland Plain within the Site is identified as Shale Hills Woodland and Shale Plains Woodland. Shale Plains Woodland is classified as critically endangered under Australia's national environment law—the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Reference to the NSW Government Office of Environment & Heritage, the Wallangarra White Gum (<i>Eucalyptus scoparia</i>) is classified under NSW Conservation Status as endangered and has been confirmed to be on the Site in the Tree Hazard & Risk Assessment Report.
Geology	With reference to the Penrith 1:100,000 Geological mapping, the Site is underlain by Bringelly Shale described as Shale, carbonaceous claystone, laminite, lithic sandstone, rare coal.
Acid Sulfate Soils	Reference to acid sulfate soil risk mapping (https://www.environment.nsw.gov.au/eSpade2Webapp) shows the Site to be outside areas mapped with acid sulfate soil potential, therefore mapped in an area of 'no known occurrence'. Reference to the Atlas of Australian Acid Sulfate Soils (CSIRO) accessed 07 July 2022, indicates that the Site is mapped as having an extremely low (1-5%) probability of Acid Sulfate Soils (ASS) occurrence. Coastal acid sulfate soils are typically found at elevations less than 5m AHD. Assessment of acid sulfate soils is not considered warranted for this site.
Hydrology and Hydrogeology	An unnamed perennial waterway is located approximately 600m west of the Site. This perennial waterway is a tributary into Kemps Creek (nearest point approximately 2.2km east of the Site), intersecting approximately 2.4km north east of the Site. The 'Upper Canal System' (Pheasants Nest Weir to Prospect Reservoir) is located 545m east of the Site, as the canal is not a natural waterway and with similar elevation profile to the Site, it is unlikely that local groundwater is in hydraulic conductivity with the man made canal feature. Based on the topography of the Site and surrounding land, location of nearby creeks and groundwater data collected by WSP (2021) groundwater flow at the Site is inferred to be in an approximately western/north-western direction.

Aspect	Detail
	With reference to the Hydrogeology Map of Australia: Commonwealth of Australia (Geoscience Australia) (accessed 07 July 2022), aquifers within the site are described as porous, extensive aquifers of low to moderate productivity. Reference to eSPADE v2.2 mapping (dated 27 July 2022) indicates the Site is located within the Upper South Creek Hydrogeological Landscape. The landscape report for this area indicates the following with respect to hydrogeology: • This landscape is characterised by low hills on Triassic shale and sandstone within the Sydney Basin • It is an area of moderate to high rainfall (~800 mm) located in the centre of the • Salinity hazard is severe • Water predominantly moves laterally through the shale layers (although vertical movement through fracturing does occur) and vertically through interbedded sandstone and sandstone fracturing (primary and secondary porosity) With reference to a previous report (WSP, 2021b – refer to Section 3.2), standing groundwater was encountered within the southern portion of the Site at depths ranging between 3.7-4.3m below top of casing (btoc) and 8.05 and 8.02m btoc respectively (we assume top of casing is approximately similar to ground level). WSP noted that the variability on depth to groundwater range within nearby bores could be attributed to <i>'infiltration of local recharging surface water through bed rock fractures'</i>.
Groundwater Use	A search of registered groundwater bores was carried out on 07 July 2022 (data sourced from Borehole Data Source: Bureau of Meteorology; Water NSW). The results indicated that there was one registered groundwater bore (GW107007) located approximately 1,300m east of the Site and was reportedly installed to a depth of 267 metres below ground level (mbgl) with a standing water level of 4mbgl. The registered purpose of the bore is for 'Water Supply', however the Salinity was described as Brackish. Since the nearest groundwater bore is reportedly located 1.3km and in an inferred up-hydraulic gradient location of the Site, it appears that groundwater is not being abstracted in the area. A review of Before You Dig Australia (BYDA) mapping for the Site shows the presence of a reticulated potable water supply, therefore it is unlikely that groundwater at the site is being abstracted for drinking water.
Heritage	With reference to Department of Finance, Services and Innovation 2022 Heritage mapping (accessed 07 July 2022), no Heritage List Items appear to be recorded at the Site.
Summary of Site observations made by SMEC	PSI walkover A SMEC environmental engineer made observations of accessible parts of the Site on 05 July 2022. Site layout and features are presented in Figure 2, Appendix A. The observations at that time noted the following: • The Site is used as a public school with the main buildings in the northern part of the Site and sports field in the south. Generally, on-site building structures were observed to constructed of brick, with some de-mountable type structures • No apparent signs of lead paint were observed at the Site. ACM was also not observed on the ground surface of the Site, however, the Site walkover did not include a detailed inspection of all building structures or the ground surface • The northern portion of Site predominately comprised buildings (offices, classrooms, school library, etc.), hardstand (asphalt and concrete, ranging from poor to good condition), and grassed areas with some gardens/vegetated areas • The south portion of the Site comprised the following: — A school field was located in the south-east of the Site. This area was grassed with trees lining the perimeter — A vegetated area was located in the south-west of the Site. This area was predominately grassed with trees, and a mulched seating area located in the centre — An open swale drainage line was observed around the perimeter of the school field and directed toward stormwater pits. Several stormwater pits were observed along the swale drainage line

Aspect	Detail
	— The northern portion of the Site generally sloped down to the south, with stairs and various levelling of different areas (i.e. building footprints, the school field, etc.) — An L-shaped mound was observed in the central-southern part of Site — An above-ground liquid petroleum gas (LPG) tank was observed in the centre west of Site The tank was fenced off. Additional site observations from a DSI walkover (which predominantly focused on the southern portion of the Site) are presented in Section 9.1.4.

3. Review of previous reports

At the PSI stage, SMEC were provided with the following reports for review (summaries of each report were presented within the PSI (SMEC, 2023)):

- Gyde Consulting (2022), Draft Due Diligence Report - Austral Public School 205 Edmondson Avenue, Austral. Prepared for School Infrastructure NSW
- Austral Public School Project Background documents including:
 - Various Asbestos Reports
 - Greencap (2017)/Aurecon (2021), Asbestos Register - Hazardous Materials and Risk Assessment - Austral Public School (1077)
 - Above Ground Liquid Petroleum Tank – Various documents
 - Haines Gas Services Pty Limited conducted regular inspections for the Site's above ground Liquefied Petroleum Gas (LPG) Tank with a capacity of 7000L. Records exist between 2004 – 2021 including vessel certificates / survey reports on the condition of the pressure vessel in accordance with the relevant standards & codes.
 - All inspection reports indicate satisfactory condition of the vessel
 - Certificate of Plant Item (2009, 2010, 2012, 2014) registration is notified to WorkCover NSW in accordance with the OHS Regulation 2001
 - Licence for keeping of Dangerous Goods (2006)
 - WorkCover NSW Acknowledgement of notification of dangerous goods on premises between (2010, 2013, 2014, 2015)
 - 'Manifest for Hazardous Chemicals'
 - Site Plan
 - Tree Safety Program
- Historical Title Searches

Following submission of the PSI report, the following additional reports were provided to SMEC by DoE and Liverpool City Council:

- WSP (2021a) Validation report: Austral Public-School Oval Excavation, 205 Edmondson Avenue, Austral
- WSP (2021b) PFAS Environmental Site Assessment: Former NSW RFS Fire Station, 59th Avenue, Austral, NSW
- Terravale Consulting Pty Ltd (2023) Human Health Risk Assessment (HHRA) of PFAS in Soil in On- and Off-site Areas of the Austral RFS Facility, 59 Ninth Street, Austral, NSW (Ref: 20030_1d_RevFinal, dated 5 September 2023)

A summary of relevant information from these reports is presented in the sub sections below. We note that these reports make reference to other reports relating to PFAS investigations at both the RFS and the school Site for which SMEC have not been provided copies and there is a gap to fully understand the chronology of events and a gap in the data.

3.1 WSP (2021a) Validation report: Austral Public-School Oval Excavation, 205 Edmondson Avenue, Austral

This report pertains to validation of residual soils following excavation of an area of PFAS contaminated soil within the school Site. The report indicates that previous sampling by WSP in 2020 identified concentrations of PFAS above adopted residential health investigation levels within the northern portion of the Austral PS sports field (refer to Figure 2-1 below). SMEC have not been provided with reports which document the earlier stages of the investigation process i.e. a report which includes an appreciation of site history or shows earlier reporting stages in the delineation process. The identified PFAS contamination was shown to be present at concentrations which exceeded human health guideline values. Based on the findings, removal of shallow soils within the area of identified PFAS was undertaken during January 2021.

A total of 184 tonnes of material were reportedly excavated from the Site and disposed to Kemps Creek landfill. Approximately 255 tonnes of validated Virgin Excavated Material (VENM) was imported to the site from quarry sites and used as backfill, and the surface of the excavation subsequently turfed.

Results from WSP's validation sampling showed that concentrations of PFAS in the remaining material at the base of the excavation, and to depths of approximately 1.0 m below ground level at the excavation perimeters, were below the adopted guideline values.

Based on the excavation works conducted at the Site and the findings of the validation sampling, WSP considered that the Site improvement objectives have been achieved and that the previously identified soil, containing PFAS at concentrations above the PFAS NEPM (2020) human health investigation levels (HILs) for residential with garden/accessible soil land uses (HIL A) values, had been removed from the site. The approximate location of the excavated material is presented in Figure 3-1 below.



Figure 3-1 : WSP PFAS remediation area (Ref: WSP 2021a)

3.2 WSP (2021b) PFAS Environmental Site Assessment: Former NSW RFS Fire Station, 59th Avenue, Austral, NSW (DRAFT REPORT)

Liverpool City Council (LCC) engaged WSP to carry out an environmental assessment at the former Austral Rural Fire Service (RFS) station and surrounding land. The former RFS was proposed for re-development for low-density residential land use. The assessment also included soil and groundwater sampling from properties surrounding the RFS site, including portions of Austral Public School. In summary, WSP carried out the following scope of works:

Scope of works

- RFS Site
 - Drilling of 13 boreholes
 - 3 boreholes converted to groundwater monitoring wells with 4 rounds of groundwater monitoring and sampling (between 07 October 2020 and 01 April 2021)
 - Collection of eight surface soil samples

- Collection of one soil sample from a soil mound and two sediment samples from a stormwater drain
- All samples submitted to a NATA accredited laboratory for analysis for PFAS
- Collection of seven concrete core samples (CC1 to CC7) (subjected to Australian Standard Leachate Procedure (ASLP) for PFAS
- Completion of a human-health risk assessment (HHRA) for the RFS Site and off-site human receptors that may be exposed to identified PFAS (SMEC have not been provided with this report)
- Completion of a desktop ecological site assessment to identify the extent of potential ecological receptors at the RFS site (SMEC have not been provided with this report).

All WSP (2021b) sampling locations are presented in Figure 3-2.

- Beyond boundary of Rural RFS Site (including within the School Site)
 - Soil investigations in off-site properties (Austral Public School, and residences at 57 and 61 to 65 Ninth Avenue) including, advancement of 67 boreholes and collection of 29 surface soil samples
 - Installation and monitoring of 2 groundwater monitoring wells within the southern portion of the school site (GW4 and GW5)
 - Collection and analysis of one swimming pool water sample at 65 Ninth Avenue
 - Collection and analysis of one tap water sample and one off-site swimming pool water sample at 65 Ninth Avenue

All soil and groundwater samples were submitted to NATA accredited laboratories for analysis of PFAS compounds.

WSP (2021b) Adopted Assessment Criteria

WSP engaged a Human health risk assessor who was engaged by WSP to assess *the potential risks to off-site (off-site of the RFS) residents and primary school users, and to assist in deriving site-specific screening criteria for perfluorooctane sulfonate and perfluorohexane sulfonate (PFOS+PFHxS) in soil*. WSP (2021) stated that, 'The HHRA developed a site-specific screening criterion of 0.045 mg/kg for PFOS+PFHxS for a low-density residential land use scenario with home grown fruit and vegetables only (i.e. excluding poultry) and a site-specific screening criterion of 0.016 mg/kg for PFOS+PFHxS for a low-density residential land use scenario with home grown fruit, vegetables and eggs (i.e. including poultry).

With regard to the development of a site-specific screening criterion for PFOS+PFHxS for a primary school land use scenario, the HHRA (Terravale, 2021) noted the following:

"While the HIL-A is the appropriate Tier 1 screening criteria for primary schools, as per NEPM guidance (Schedule B1, NEPC, 2013), and given the criterion is also protective of ingestion of home grown produce impacted by pathways of bioaccumulation from PFAS in soil, adoption of this criterion is overly conservative for school properties. Given the exceedances of the adopted Tier 1 criterion, further assessment of potential risks to school users was required."

Additionally, soil and sediment analytical results for PFOS and Perfluorooctanoic acid (PFOA) were also assessed against the ecological guideline values for soil (direct and indirect exposure) provided in the PFAS NEMP (HEPA, 2020). It is noted that this comparison was undertaken with consideration to the findings of an Ecological Site assessment (ERA) (carried out by WSP – SMEC do not have access to this report), which determined that there was an overall low potential of PFAS bioaccumulation for the limited number of native semi-terrestrial fauna species that may periodically occur within the RFS site.

Groundwater results were compared to:

- PFAS NEMP (HEPA, 2020) Ecological water quality guideline values developed by water regulators – 95% freshwater species protection.
- PFAS NEMP (HEPA, 2020) Human health guideline values developed by health regulators, drinking water quality guideline value (Australian Government Department of Health 2019).
- PFAS NEMP (HEPA, 2020) Human health guideline values developed by health regulators, recreational water quality guideline value (National Health and Medical Research Council 2019).

SMEC have not been provided with the Terravale (2021) report.

Investigation results

A summary of the investigation results is presented below:

- Groundwater – RFS Site
 - The following groundwater exceedances of adopted assessment criteria were recorded within groundwater samples collected from monitoring wells installed within the RFS Site:
 - PFOS was recorded in two wells (GW1 and GW3) marginally exceeding PFAS NEPM 2.0 ecological water quality guideline (95% species protection)
 - PFOS and PFHxS were recorded above PFAS NEPM drinking water quality guidelines GW1 – GW03
 - PFOS and PFHxS were recorded above PFAS NEPM recreational water quality guidelines in GW2 and GW3
- Groundwater – School Site
 - PFOS and perfluorohexane sulfonic acid (PFHxS) were recorded above PFAS NEMP 2.0 drinking water quality guidelines within GW05 (April 2021 monitoring round only)
 - PFAS compounds were not detected during any of the monitoring rounds at GW04.
- Soil results

Table 3-1: Summary of WSP (2021b) PFAS in soil data

Location	PFAS compound	Min concentration (ug/kg)	Average concentration (ug/kg)	Max. concentration (ug/kg)
59 Ninth Avenue (RFS Site)	PFOS	0.1	32.5	400
	PFHxS	0.1	72	72
	PFOS + PFHxS	0.1	35.1	419
Austral Public School	PFOS	0.2	31.7	370
	PFHxS	0.1	8.8	66
	PFOS + PFHxS	0.1	36.9	374.7
57 Ninth Avenue	PFOS	1.3	31.7	370
	PFHxS	0.1	0.1	0.1
	PFOS + PFHxS	1.3	7.3	3.0
61 Ninth Avenue	PFOS	0.4	51.1	640
	PFHxS	0.1	8	71
	PFOS + PFHxS	1.1	58.9	678

- Sediment – RFS Site
 - WSP (2021) reported that Concentrations of PFCAs and PFSA were reported above the laboratory Limits of Reporting (LOR) in stormwater drainage sediment samples SED1 and SED2. The reported concentrations of PFAS in sediment samples collected at the site did not exceed the criteria, with the exception of PFOS in sample SED1 (collected from the stormwater pit located at the north-western corner of the on-site concrete slab) which marginally exceeded the PFAS NEMP (HEPA, 2020) ecological guideline value for indirect exposure.

- Leachability Testing
 - Australian Standard Leaching Procedure (ASLP) leachability testing was carried out on 28 soil samples (noting only one leachability test was done on samples collected from the school site) across the investigation area, samples were selected due to their elevated, but generally representative PFAS concentrations (PFHxS+PFOS ranged from 5.7 µg/kg to 427.6 µg/kg). The detected leachate PFHxS+PFOS concentrations in the soil samples submitted for ASLP analysis ranged from 0.14 µg/L to 12.3 µg/L.
 - WSP stated that the results indicate that there is a potential for leaching of PFAS from soil at the RFS site and nearby residential properties, in which the generated leachate could exceed the adopted ecological and human health protection criteria.
 - Some leachability testing was carried out on concrete core samples collected from a slab at the RFS Site, the results indicated that there is a potential for leaching of PFAS from the concrete on site, in which the generated leachate could exceed the adopted ecological and human health protection criteria.

Conclusions and Recommendations

- In summary, WSP reported that the following, with regards to PFAS contamination:
 - Based on the distribution of PFAS in soil at the RFS site and in surrounding properties off-site migration of PFAS from the RFS site appears to have likely occurred via surface water flow/runoff;
 - The Human Health Risk Assessment (HHRA) conducted by Terravale (2021, now updated to 2023) determined that, “risks to both students or adult workers at the primary school are low and acceptable, based on the maximum PFOS+PFHxS concentration in surface soils”
- PFOS marginally exceeded the ecological freshwater criteria in on-site groundwater wells GW1 and GW3. Additionally, PFOS+PFHxS was reported above the drinking and/or recreational WQGV in groundwater wells GW1 to GW3 and/or GW5
- Leachability analysis of RFS concrete hardstand and soils located at the RFS site and surrounding properties indicated that there was a potential for leaching of PFAS from these media, in which the generated leachate could exceed the adopted ecological and/or human health protection criteria for groundwater
- Based on the analytical concentrations of PFAS in soil at 59 (RFS Site), 61 and 63 Ninth Avenue, a potentially unacceptable risk to human receptors is likely to be present at these properties (such as through direct ingestion of soil or foods produced in the impacted area/s). The former NSW RFS site is not considered suitable for low-density residential land use and site improvement works should be undertaken at this property, in addition to the residences at 61 and 63. Given that no registered groundwater extraction bores are located within 1 km of the RFS site, that the RFS site is situated in an area with a reticulated water supply, and that the groundwater Total Dissolved Solids (TDS) at and in the vicinity of the RFS site are defined as unacceptable for drinking water purposes, the ingestion pathway via groundwater is considered incomplete based on a lack of receptors. Additionally, with the exception of PFHxS+PFOS which marginally exceeded the PFAS NEMP (HEPA, 2020) drinking guideline in the closest downgradient monitoring well to the RFS site (i.e. GW5), PFAS was reported below applicable human health criteria in off-site groundwater monitoring wells. As such, the risk to on-site and off-site receptors from identified PFAS in groundwater is considered to be low and acceptable
- PFAS identified in soil and groundwater at the RFS site is not considered to present a potentially unacceptable risk to on-site or off-site ecological receptors
- A site improvement options plan (SIOP) was recommended for the RFS site and the properties located at 61 and 63 Ninth Avenue to outline the requirements for removal and validation of PFAS impacted soil. The proposed site improvement methodology should also consider removal of the most impacted mass and soil leachability to reduce the potential for ongoing PFAS release to the environment (where possible), including material within the Austral Public School property. The SIOP should also contain contingency measures for the improvement/validation of any additional areas of PFAS in soil at concentrations above applicable criteria that may be encountered during site improvement works.



Figure 3-2: WSP (2021b) sampling locations within the southern portion of the school Site

3.3 Terravale (2023) Human Health Risk Assessment (HHRA) of PFAS in Soil in On- and Off-site Areas of the Austral RFS Facility, 59 Ninth Street, Austral, NSW

Terravale Consulting Pty Ltd (Terravale) was engaged by WSP, on behalf of the NSW RFS, to undertake a targeted human health risk assessment (HHRA) of PFAS impacts in soil on- and off-site at the former RFS site (59 Ninth Avenue, Austral, NSW). The conclusions appear unchanged from what was summarised in the WSP (2021b) report. The conclusions were as follows:

“Based on a review of the available data, it was identified that an assessment of risks was required due to the presence of PFAS in shallow soils on- and off-site at the RFS Austral site. The HHRA concluded the following:

- Risks were potentially unacceptable for on- or off-site residents in a low-density residential scenario, whereby up to 10% of fruit and vegetable intake is home grown in PFAS impacted soils. However, if the fruit and vegetable pathway were removed or managed, the risks to residents would be low and acceptable.*
- Risks are low and acceptable for primary school students, based on daily exposures to the maximum PFOS+PFHxS concentration detected in soil near the southern school boundary.*
- Risks are low and acceptable for adult workers at the primary school, assuming daily exposures to the maximum PFOS+PFHxS concentration detected in soil near the southern school boundary.*

A site-specific screening criterion was derived using assumptions consistent with the low-density residential criteria developed in the NEPM (NEPC, 2013) and with consideration of PFAS specific information presented in the PFAS NEMP (HEPA, 2018; OEH, 2019). An additional criterion was derived to include an assessment of the egg ingestion pathway for low density residential settings.

The key difference between the site-specific criteria presented herein and the generic residential criteria presented in the NEMP was as follows:

- Background intakes were reduced to 5%, whereas the generic criteria assume a background intake of 80%. This value is supported by recent research done into blood PFAS concentrations in the Australian population.*

The site-specific criteria are therefore considered appropriate for protection of a generic residential scenario, consistent with the ASC NEPM HIL-As, due to the adoption of default upper bound estimates of exposure and toxicity, with consideration of current science with regards to population-based exposures.”

4. Site history Summary

Review of Site history was carried out as part of the PSI. A summary of the Site history obtained from the PSI (SMEC, 2023) is presented below.

Austral Public School was reportedly opened in 1893, with 21 children enrolled to the school by mid-year. Some extensions were made to the school by 1938. During World War 2, Austral Public School had air raid shelters, which included slit trenches for children's safety in case of attack. In 1956, a new building containing four classrooms, an office, staffroom, storeroom and other facilities was opened. In late 1977, the school was expanded further (Austral Public School Centenary 1893-1993. Austral Public School Centenary Committee, 1993).

Aerial images suggest evidence of crop growing (including a small farm dam type feature) within the existing sports field (south-eastern portion of the Site) in historical aerial photographs from 1949 to at least 1965. This area of the Site appears to have been utilised as a sports field since at least 1978 to present day. During the 1960's and late 1970's several phases of development occurred, whereby some smaller structures were demolished and replaced by larger building structures. By 1982, the general school layout had been developed into the approximate layout visible today (aside from some minor building additions and amendments). An above ground Liquid Petroleum Gas (LPG) tank is located at the Site and is historically used for heating.

The Site surrounds appear to have gradually developed from a predominantly rural area (including crop growing) with scattered dwellings and associated sheds into a predominantly low-density residential area with some commercial/retail lots. The lot immediately to the east of the Site appears to have been utilised as a farm/crop growing area (with suspected large chicken shed) from at least 1949. Austral Rural Fire Service (RFS) have historically used a facility immediately to the south of the Site. WSP (2021) indicate that the RFS has been operating since the 1980's and was historically used for training purposes which may have included the use of aqueous firefighting foam (AFFF). The Austral RFS site is currently being investigated under the NSW RFS PFAS investigation program. A vehicle mechanics workshop is located beyond Tenth Avenue to the north of the Site.

4.1 Site information and Site history data gaps

The following are considered potential historical data gaps for the PSI:

- SMEC have only been provided with some copies of reports relating to PFAS investigations at the adjacent RFS and surrounds (including the school Site), other reports have been prepared which are referenced, but not yet provided. One of the reports is in draft. There is a gap in the chronology of events and a gap in the data set.

5. Preliminary Conceptual Site Model

The PSI (SMEC, 2023) provided a preliminary Conceptual Site Model (CSM). Based on the Site history and observations at the time, six potential areas of environmental concern (AEC) and potential contamination sources were identified, including:

- AEC 1 - Areas near former/existing building structures from weathering and/or ineffective demolition of hazardous building materials.
- AEC 2 - Historical on-site and offsite firefighting activities potentially involving PFAS containing firefighting foam
- AEC 3 - Whole Site from fill of unknown origin and/or quality. Also several small suspected fill mounds were identified during site walkover
- AEC 4 - Historical agricultural activities and potential application of pesticides for sports ovals onsite and off-site agricultural activities associated with poultry farms
- AEC 5 - Septic Tanks prone to overflowing during heavy rainfall. Off-site septic tanks belonging to residents in the southern portion of the site has been known to leak and flow onto the Site.
- AEC 6 - On site historical farm dam sediments which may have received run-off from surrounding land and could have acted as a sink for contamination and fill.

AECs are presented in Figure 3, Appendix A.

Based on the findings of the PSI there are a number of plausible source-pathway-receptor linkages for the site (in the context of the proposed construction activities) as presented within Table 5-1.

Table 5-1 Potentially complete contamination source, pathway and receptor linkages

Source		Potential Pathway		Potential Receptor (s)
Primary	Secondary	Migration Pathway(s)	Exposure Pathway(s)	
(AEC 1) Hazardous materials from former/existing building structures (AEC 3) Fill of unknown origin and/or quality (AEC 4) Historical agricultural activities (AEC 6) Farm dam sediment/fill	-	- Exposing soil during earthworks - Erosion - Exposed soil/wind blown	- Dermal contact - Inhalation of soil dust - Incidental ingestion (human) - Ingestion (biota) - Plant uptake	- Future users of the site e.g. students and staff - Site workers during future construction works or maintenance activities - Off-site residential receptors (from wind-blown dusts/fibres) - Onsite ecological receptors (plants, terrestrial organisms, transitory wildlife) - Offsite ecological receptors (nearby water ways)
(AEC 2) PFAS from past firefighting training	PFAS in soil	- Exposing soil during earthworks - Erosion	- Dermal contact - Inhalation of soil dust - Incidental ingestion (human)	- Future users of the site e.g. students and staff - Site workers during future construction works or maintenance activities - Off-site residential receptors (from wind-blown dusts/fibres) - Onsite ecological receptors (terrestrial organisms, transitory wildlife, including predators)
	PFAS in Groundwater	Transport in groundwater to surface water	- Dermal contact - Incidental ingestion (human)	- Site workers during future construction works or maintenance activities (if intersecting groundwater) - Offsite ecological receptors (nearby water ways)
	PFAS in Surface water/ stormwater/sediment	Transport through stormwater and offsite	Ingestion (biota)	- Recreational users - Consumers of food (if relevant)
(AEC 5) Septic overflow		- Exposing soil during earthworks - Erosion - Exposed soil - Transport through stormwater and offsite	- Incidental ingestion (human) - Ingestion (biota)	- Future users of the site e.g. students and staff - Site workers during future construction works or maintenance activities - Offsite ecological receptors (nearby water ways)

6. Data Quality Objectives

The data quality objectives (DQOs) in Table 6-1 were developed for this project and are based on the requirements detailed in the ASC NEPM (1999) (amended 2013). Data Quality Indicators (DQIs) are included in Appendix B.

Table 6-1 Data quality objectives.

Step	Tasks
Step 1 State the problem	The objectives are: - Assess the potential for contamination to be present at the Site with respect to the proposed school upgrade works - Provide recommendations on the suitability of the Site for the proposed activity - Provide recommendations on the need for further investigations and/or management based on the findings. The main considerations are: - What sample layout should be used to achieve the above objectives? - How many samples should be collected? - What analytes should be tested? - What media should be tested? A preliminary conceptual site model outlining potential sources/areas and contaminants of potential concern was developed in the PSI (summarised in Section 5). The key assessment team consisted of SMEC staff: Harrison Wood (Graduate Environmental Engineer), Sam Vaughan (Project Manager), and Manuel Fernandez (technical reviewer).
Step 2 Identify the decisions	The decisions to be made are: - Whether the soil data supports that the Site is suitable for ongoing use as a school under the proposed activity layout (i.e. construction of dual storey amenities building, car park, games court, car park area, substation and septic tanks and open play space), based on contaminant levels and aesthetics. - Whether there is a need for further assessment or remediation/management required? The alternative outcomes will be: - The soil is suitable for a public school land use (HIL A) Or - The soil is not suitable for a public school land use (HIL A) and requires remediation/management to allow the proposed activity. If the contamination status of the material is acceptable, the material can remain on-site. If the contamination status of the material is unacceptable, consider the remediation hierarchy.

Step	Tasks
Step 3 Identify information inputs	The inputs required to make the decisions listed in Step 2 were as follows: • Information from the PSI • Site observations made during the intrusive investigations, including observations of fill/natural soil depth, and contamination indicators (suspected ACM, unusual odours, staining or buried waste materials) • Field soil headspace screening for VOCs using a photo-ionisation detector (PID) during fieldwork • Soil physical-chemical parameters (for derivation of EILs) • Soil sample results (tested at a NATA accredited laboratory for the contaminants of potential concern identified as part of the PSI) • A detailed site walkover of the southern portion of the Site • Applicable NSW EPA endorsed guidelines (refer to Assessment Criteria Section0) • Sampling and analytical methods will be assessed against Data Quality Indicators (Appendix B)
Step 4 Define the study boundaries	Laterally, the study boundary is generally defined by the Site boundary (i.e. the investigation boundary), as shown on Figure 1 and Figure 2, Appendix A (2.98ha), the northern portion of the Site currently comprises multiple school buildings and paved areas and it was not possible to test soils beneath these areas, therefore the investigation was limited to accessible portions of the Site. Vertically, the study boundary for this detailed investigation will be to the top of natural materials (anticipated to be <1m bgl). The decision is to be based on the complete decision area. However, following data analysis, some form of segregation may be considered, i.e. some of the decision area may be suitable for HIL-A and some may require remediation/management.
Step 5 Develop the analytical approach (decision rule)	The decision rule for soils was as follows: • A data validation assessment will be carried out for all data collected with respect to quality assurance and quality control (QA/QC) and conclude if the data collected is useable, partially useable with some limitations, or unusable in forming conclusions to the assessment. • If there is no field evidence of contamination and contaminant concentrations for each sample are below the assessment criteria, then no further assessment will be required with respect to that contaminant or area • For areas where sufficient data has been collected in a systematic pattern and with respect to human health, the 95% Upper Confidence Limit (UCL) of the arithmetic mean contaminant concentration should be below the assessment criteria and the results must also meet the following: — No single value is to exceed 250% of the human health criteria — The standard deviation must be less than 50% of the human health criteria Additional considerations will include aesthetic requirements as per Section 7.6. If the statistical parameters (or aesthetics) of the sampling data exceed the assessment criteria, then remediation/management will be required, otherwise soils will be assessed to be suitable for a HIL-A land use. The CSM will be updated and used to make an assessment of the data along with consulting judgement and experience.

Step	Tasks
Step 6 Specify performance or acceptance criteria	We have assumed the following to be true in the absence of contrary evidence (i.e. the null hypothesis): - Contamination at the Site currently poses a potential risk to human and/or environmental receptors. The possibility exists of making the following decision errors based on the data obtained during this investigation: - Type 1 error – Deciding the above null hypothesis is false, when it is true - Type 2 error – Deciding the above null hypothesis is true, when it is false. The consequence of making a Type 1 error is more detrimental as it can result in adverse consequences or may include material impact to human and environmental health. The consequence of making a Type 2 error may result in 'over-conservatism' and unnecessary expense of conceptual remediation options and capping design. The potential for decision errors will be minimised by completing a robust quality control (QA/QC) program and by completing an investigation that has an appropriate sampling and analytical density for the purposes of the investigation. The QA/QC program would conclude if the data collected is useable, partially useable with some limitations, or unusable in forming conclusions to the assessment. The assessment will be carried out as per the Data Quality Indicators (DQIs) (completeness, comparability, representativeness, precision and accuracy) in Appendix B.
Step 7 Optimise the design for obtaining data	Sampling was carried out in accordance with the methodology in Section 8, and optimised the design for obtaining data using the following measures: - Field investigations were carried out by trained environmental scientist/engineer, under direction of senior staff experienced contaminated land assessment - In addition, the first day of fieldwork was supervised by the project manager (Sam Vaughan – Senior Environmental Scientist) - Site observations of visual and olfactory evidence of contamination were made at sampling locations - Sampling was generally carried out on a roughly equally spaced systematic grid, in some instances, sampling locations needed to be adjusted to account for logistical issues e.g. inaccessible area, trees, paved areas, buried services etc. - Analysis was selected based on subsurface observations and field PID soil headspace screening.

7. Assessment Criteria

7.1 General

Evaluation against assessment criteria is used to identify levels of contamination that may pose ecological or health risks to potential receptors or future users of the Site.

The National Environment Protection (Assessment of Site Contamination) Measure (NEPM) was first published in 1999 and updated in 2013 by the National Environment Protection Council (NEPC) and provides national standards for a variety of environmental issues, including the assessment of Site contamination in Schedule B (1) Guideline on Investigation Levels for Soil and Groundwater.

The NEPM requires consideration be given to Health-based Investigation Levels (HIL), Health-based Screening Levels (HSL), Ecological Investigation Levels (EIL), Ecological Screening Levels (ESL), Management Limits, asbestos criteria and aesthetic issues. The following sub-sections outline the rationale for the selection of the appropriate levels for the DSI.

7.2 Health Investigation Levels (HILs) and Health Screening Levels (HSLs)

7.2.1 Soil assessment criteria

Health investigation levels (HIL) are scientifically based, generic assessment criteria designed to be used in the first stage (Tier 1 or 'screening') of an assessment of potential risks to human health from chronic exposure to contaminants. They are intentionally conservative and are based on a reasonable worst-case scenario for four generic land use settings outlined below:

- HIL A – residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake, (no poultry), also includes children's day care centres, preschools and primary schools
- HIL B – residential with minimal opportunities for soil access includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats
- HIL C – public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. It does not include undeveloped public open space (such as urban bushland and reserves) which should be subject to a site-specific assessment where appropriate
- HIL D – commercial/industrial such as shops, offices, factories and industrial sites.

Adopted HILs for contaminants (excluding PFAS) were sourced from NEPM (2013) Schedule B1. HILs for PFAS compounds (specifically PFOA and sum of PFOS + PFHxS) are available from the PFAS NEPM (2020) Table 2 HIL for soil.

The Site is currently a primary school and will continue to operate as a primary school into the future, therefore HIL A criteria is considered relevant. SMEC notes that WSP conducted a Human Health Risk Assessment and decided to use alternative assessment criteria derived for the Site to assess human health risk from soils at the school Site, however, we have not received or reviewed the HHRA report and therefore, for this DSI assessment all soil results will be assessed against HIL A criteria.

Health Screening Levels (HSLs) for petroleum hydrocarbons are available from ASC NEPM (2013) and CRC Care (Friebel E and Nadebaum P, 2010). These references provide HSLs for vapour intrusion for soil at various depth ranges and soil types. CRC Care also provides HSLs for direct contact and for vapour intrusion for intrusive maintenance worker (shallow trench). A conservative approach has been adopted for this assessment with initial results compared to HSLs for 'sand', 0 to <1m and coarse-grained soils.

To summarise, with respect to human health, the following assessment criteria was adopted for soils for this DSI:

- Table 1A (1) Health-based investigation levels – residential with garden/accessible soil (HIL A) (NEPM Schedule B1 (2013))

- Table 1A (3) Soil HSLs for vapour intrusion – residential with garden/accessible soil (HIL A) (NEPM Schedule B1 (2013))
- Table B4 Soil HSL for direct contact – residential with garden/accessible soil (HIL A) and Intrusive maintenance worker (CRC Care Technical Report No. 10 (Friebel and Nadebaum 2011))
- Table 2 Human Health Investigation Levels for Soil – residential with garden/accessible soil (HIL A) (PFAS NEMP 2.0 (2020)).

7.3 Ecological Screening and Investigation Levels (EILs/ESLs)

EILs and ESLs are relevant where ecological receptors are likely to be present and exposure pathways are complete.

Reference to Remnant Vegetation of the Cumberland Plain: NSW Office of Environment and Heritage (dated 07 July 2022), Remnant Vegetation of the Cumberland Plain within the Site is identified as Shale Hills Woodland and Shale Plains Woodland. Shale Plains Woodland is classified as critically endangered under Australia's national environment law—the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Reference to the NSW Government Office of Environment & Heritage, the Wallangarra White Gum (*Eucalyptus scoparia*) is classified under NSW Conservation Status as endangered and has been confirmed to be on the Site in the Tree Hazard & Risk Assessment Report. The following ecological soil assessment criteria has been used for the investigation:

- NEPM (1999) Table 1B (1) to 1B (5) Ecological investigation levels (EILs) – Urban residential and public open space – Generic EILs
- NEPM (1999) Table 1B (1) to 1B (5) Ecological investigation levels (EILs) – Urban residential and public open space – Site-specific EILs^{*1}
- NEPM (1999) Table 1B (6) Ecological screening levels (ESLs) – Urban residential and public open space
- PFAS NEPM (2020) Table 3 Ecological guideline values for soils – Ecological direct exposure and indirect exposure.

^{*1}For assessment against EILs, soil analytical results were compared with the NEPM (2013) Generic EILs to assess potential risks to current and future ecological receptors at the Site for selected analytes (arsenic, DDT, lead, and naphthalene). For other analytes (including copper, chromium(III), nickel and zinc) the EIL values rely on site-specific inputs and calculations. These were calculated using the NEPM (2013) ASC Toolbox.

Site-specific EIL input values were calculated by incorporating the average values of soil physiochemical parameters (pH, CEC and TOC) from two selected soil samples that were considered to be indicative of the general Site surface soil conditions, the average were calculated using the results presented in Table 7-1 below:

Table 7-1 Physiochemical parameters to calculate site-specific EILs.

Sample name	pH _{CaCl2}	Cation Exchange Capacity (CEC) (meq/100g)	Total Organic Carbon (TOC) (%)	Clay (%)
EIL-TP10-0.0-0.1	5.2	13.0	1.0	32
EIL-TP23-0.0-0.1	5.4	9.2	0.6	30
Average	5.3	11.1	0.8	31

EILs apply principally to contaminants within the top 2m of soil at the finished surface/ground level, which corresponds to the root zone and habitation zone of many species. In general, the toxicity of soil contaminants (both organic and inorganic) will reduce or age over time to a lower and more stable level by binding to various soil components and decreasing their biological availability. For the purposes of site-specific EIL derivation, a contaminant incorporated in soil for at least 2 years is considered to be 'aged'. Based on the preliminary conceptual site model, it is considered that the use of site-specific EIL criteria applying to 'aged' contamination is most appropriate for this Site.

Site-specific EIL criteria were derived by inputting the average values from Table 7-1 into the NEPM (2013) ASC toolbox, the calculated criteria are presented in Table 7-2 below.

Table 7-2 Physiochemical parameters to calculate site-specific EILs.

	Copper	Nickel	Chromium (III)	Zinc
	mg/kg	mg/kg	mg/kg	mg/kg
Urban residential and open public spaces	110	180	590	310

7.4 Management Limits

Management Limits have been considered as investigation levels. The purpose of these is to avoid or minimise potential effects of petroleum hydrocarbons. The ASC NEPM identifies these effects as:

- Formation of observable light non-aqueous phase liquids (LNAPL)
- Fire and explosive hazards
- Effects on buried infrastructure.

The following management limit criteria have been adopted for this assessment:

- Table 1B (7) Management Limits (Residential, parkland and public open space).

7.5 Asbestos Criteria

The adopted Site screening level in accordance with NEPM (2013) includes no visible asbestos for surface soil. The adopted assessment criteria for this Site have been conservatively assumed to be:

- No asbestos detected
- No asbestos at the ground surface.

7.6 Aesthetic Criteria

Since some areas of the Site could be used for playing fields for the school, the following aesthetic criteria has been adopted:

- Soils shall not be discoloured or affected by odours or inclusions, such as demolition rubble, litter, or domestic waste, to an extent that this would be considered a hazard or nuisance.

7.7 Groundwater

With reference to the groundwater level data in a previous report (WSP 2021b), standing groundwater was encountered at the Site with monitoring wells GW4 and GW5 (located within the southern portion of the Site) at depths ranging between 3.7-4.3m bgl and 8.05 and 8.02m bgl respectively. Based on the shallowest recorded depths to groundwater (i.e. 3.7m bgl), it is unlikely that groundwater will be engaged during the proposed construction in main excavations, furthermore, a review of Before You Dig Australia (BYDA) plans show potable water mains near to the school Site indicating that the School water is from a reticulated supply. For these reasons, groundwater will not be assessed as part of this DSI.

8. Sampling Methodology

8.1 General

The DSI assessment area is approximately 2.98 ha. With reference to Table 2: Minimum number of sampling points for a square grid, based on Site area (NSW EPA (2022) Sampling Design Guidelines: Part 1 – Application) a 2.98-hectare site requires approximately 39 sampling points.

Based on the Site history, AECs and access, 44 sample locations were used to assess the Site with respect to contamination.

In total, 44 sampling points were proposed (as presented on Figure 4, Appendix A) using a combination of mechanical excavation methods and hand auger locations (for areas that were not accessible for the excavator). A summary is provided below:

- 29 x mechanically excavated test pits using an excavator (to a maximum depth of 1.1m bgl)
- 15 x hand auger locations around the less accessible portions of the Site, i.e. proximal to existing buildings within the northern portion of the Site (to a maximum depth of 0.5m bgl).

Table 8-1 below provides a summary of the methodology for sampling locations. Sampling locations are presented in Figure 4, Appendix A.

Table 8-1 Sampling methodology.

AEC		Methodology
AEC 1	Areas near former/existing building structures	Sixteen sampling Locations (HA01 to HA14, TP19 and TP20) targeted this AEC using judgemental sampling techniques. We note that this AEC includes multiple historical structures and it was not possible to target all historical structures during the investigation (due to some former structures being beneath existing building footprints). The method of assessment was also restricted to hand tools. This sampling strategy was used to gain an initial assessment of widespread contamination from this AEC.
AEC 2	Historical onsite and offsite firefighting training activities involving PFAS containing firefighting foam	Twenty six sampling Locations (TP01 to TP25 and HA25) targeted this AEC and were placed on an approximate systematic sampling pattern across the southern portion of the Site.
AEC 3	Whole of Site from fill of unknown origin and/or quality; several small suspected fill mounds	All sample locations (44) have been used to assess the extent and quality of fill across the Site. This is considered adequate based on the Site area.
AEC 4	Historical onsite and current offsite agricultural activities and potential application of pesticides on sports ovals	All sample locations (44) have been used to assess this AEC. This is considered adequate based on the Site area.
AEC 5	Offsite Septic Tanks prone to overflowing during heavy rainfall	Sampling Locations HA09, HA12, TP24 and TP25 were undertaken to target this AEC, however a discrepancy occurred and the samples were not analysed for faecal coliforms as planned.
AEC 6	Onsite historical farm dam sediments and fill	One sampling location (TP11) was proposed and undertaken to target this AEC. The former farm dam appeared to be relatively small.

Notes:

- AEC5 was targeted with intrusive sampling locations, however, faecal coliforms analysis was not carried out on any sample.

8.2 Excavation and Soil Sampling Procedure

The following excavation and soil sampling method was adopted for the field investigation:

- Prior to breaking ground at the Site, Before You Dig (BYD) Australia plans were reviewed and an accredited service locator were engaged to clear each of the proposed investigation locations
- Fieldwork was attended on a full-time basis by a trained and experienced environmental scientist
- A new pair of nitrile gloves was worn for each different sampling location.
- For test pits, the excavator would strip a section of turf (where present) and place this to the side of proposed test pit (in grassed areas). As far as practicable, excavated spoil was backfilled in reverse order (e.g. deepest material backfilled first) with test pits 'tamped' with the excavator bucket to reduce the likelihood of future settlement. Soil samples from test pits were collected from spoil which had not come into direct contact with the excavator bucket
- The hand auger was decontaminated prior to use and between sampling locations using a triple rinse procedure. The adopted triple rinse procedure is further described in Section 8.4.1.2
- All soil sample were collected within clean laboratory supplied containers.
- All soil samples were collected in duplicate into a separate zip lock bag and field-screened using a photoionisation detector (PID). The PID were calibrated in accordance with manufacturer instructions. Calibration certificates/records are provided in Appendix D
- Soils were logged using the Australian Standard AS1726-2017 Geotechnical Investigations, and in general accordance with SMEC Standard Operating Procedures (SOPs)
- A visual assessment was made of encountered soil material for the potential presence of contamination indicators such as staining or odours.

8.3 Field and Laboratory Testing Schedule

Samples for contamination testing were submitted to the following laboratories for testing for the nominated potential contaminants of concern:

- Primary samples: ALS Environmental (277-289 Woodpark Road, Smithfield NSW 2164)
- Secondary samples: Eurofins Services (179 Magowar Road, Girraween, NSW 2145)

Both laboratories are accredited by the National Association of Testing Authorities Australia (NATA) for the tests to be performed. A summary of testing quantities is provided below:

- 48 primary samples for asbestos identification in soils (AS4964) testing
- 55 samples for metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg), Organochlorine Pesticides (OCPs) and organophosphate pesticides (OPPs), polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAH)
- 27 samples for PFAS (short suite, Eurofins laboratory standard limits of reporting)
- 2 samples for clay content, iron (%), cation exchange capacity, total organic carbon (results were used for calculation of Site Specific Ecological Investigation Level calculation).

8.4 Quality Assurance and Quality Control

The following quality assurance and quality control plan was adopted for the environmental sampling in general accordance with NEPM requirements. DQIs are presented in Appendix B.

8.4.1 Field QA/QC

8.4.1.1 Sample Handling, Storage and Transportation

Sampling of soils were carried out by trained and experienced environmental staff using sampling protocols which minimise potential cross contamination occurring in between sampling locations. The field scientist was also supported by a senior environmental scientist on the first day of the field investigation.

During fieldworks, samples were placed in an ice-filled chest in an attempt to keep the soil samples below the recommended preservation temperature of approximately 6 °C. Samples were kept refrigerated until delivered to the testing laboratory. Samples Receipt Advice/Notifications confirmed that samples were received at the following temperatures:

- Batch ES2313155 (ALS laboratory): 1.6°C
- Batch ES2314312 (ALS laboratory): 1.6°C
- Batch ES2312740 (ALS laboratory): 22.9 °C (It is noted that this batch included samples for asbestos analysis only, and so did not require refrigeration for sample preservation)
- Batch 983682 (Eurofins laboratory) 3.1°C.

Samples, including QA samples, were transported to the laboratories with relevant Chain of Custody (CoC) documentation. The CoC form were completed with the sample names, sampling date and required analyses. The samples were sent in a sealed ice chest to the laboratory for analysis within the prescribed analyte holding times, except for the following:

- pH in soil using 0.01M CaCl extract, pH 1:5 and electrical conductivity in samples EIL-TP10-0.0-0.1 and EIL-TP23-0.0-0.1 in Batch ES2314312 exceeded the extraction date by 8 days.

Given that the analytes tested in the EIL samples are used for deriving the site-specific EIL criteria, and that all other analytes were analysed within appropriate holding times, this is unlikely to significantly impact the interpretation of the data.

8.4.1.2 Equipment Decontamination

Reusable sampling equipment with the potential to cross contaminate samples (e.g. hand augers), were decontaminated using a triple wash procedure; that is, washed in diluted Liquinox (PFAS free) detergent solution, rinsed in potable water and then rinsed in distilled water between sample locations.

8.4.1.3 PFAS Protocols

The following additional protocols were adopted for all fieldwork due to soil samples requiring analysis for PFAS:

- Prior to sampling, the sampling personnel washed their hands with plain soap and rinsed thoroughly in tap water before donning a clean, new pair of disposable nitrile gloves
- Field clothes were not be new (i.e. had been washed minimum of six times)
- No stain resistant, water resistant/waterproof coatings or treated fabric were used
- No Teflon products were used
- No fast food wrappers, pre-wrapped foods (only rigid plastic or stainless-steel containers) were permitted on Site
- No aluminium foil were permitted to be used
- No reusable chemical ice packs were used to chill samples.

8.4.1.4 Equipment Rinsate

A rinsate sample was collected to assess the effectiveness of equipment decontamination. One rinsate sample (Rinsate 2) was collected as part of the QA/QC procedure in the field by running laboratory prepared rinsate water across the end of the decontaminated hand auger. The blank water was collected directly into sample containers for analysis. The rinsate sample was treated in the same manner as other samples collected during the investigation. The rinsate sample was analysed for TRH, BTEX, PAH, Phenols, OC, OPP, PCB, metal (8 analytes). The hand auger was not used for PFAS sampling and therefore the rinsate sample was not tested for PFAS.

None of the tested analytes were recorded above the laboratory limits of reporting. The rinsate result is presented in Table G3, Appendix G.

8.4.1.5 Equipment Calibration

Monitoring equipment used to collect data was calibrated and/or serviced at a regular frequency in accordance with manufacturers recommendations. At a minimum, this included a PID calibration within one month of fieldwork (i.e. minimum monthly). Regular 'bump' tests were carried out in the field to assess potential calibration drift during monitoring. Calibration certificates are included in Appendix D.

8.4.1.6 Trip Blank and Trip Spike Samples

BTEX/volatile TPH trip spike and trip blank samples provided by the laboratory were taken into the field during soil sampling. These quality control samples were stored in the same manner as other samples. These were later analysed to assess potential loss of volatiles and/or volatile cross contamination during soil sampling. One trip spike recorded acceptable recoveries and the one trip blank recorded concentrations below the laboratory reporting limits. A PFAS trip blank was not taken into the field. Assessment of potential PFAS cross contamination during handling/transport cannot be made. SMEC adopted appropriate PFAS protocols for this assessment and only two samples recorded PFAS exceedances suggesting potential for widespread sample cross contamination is unlikely.

Trip blank and trip spike results are presented in Table G1, Appendix G.

8.4.1.7 Field Duplicates

Duplicate samples were selected for analysis and are summarised in Table 8-2.

Table 8-2: Field duplicate sample.

Primary Sample ID	Media	Duplicate ID	Type	Laboratory	Analysis
TP20/0.0-0.1	Soil	DUP01	Intra lab duplicate	ALS	Metals, PCB, OCP, OPP, BTEX, phenolic compounds, PAH, TPH, TRH, PFAS
		DUP01A	Inter lab duplicate	Eurofins	
TP21/0.0-0.1	Soil	DUP02	Intra lab duplicate	ALS	

Notes:

- PCB (polychlorinated biphenyl), OC (Organochlorine phosphates), OP (Organophosphate pesticides), BTEX (benzene, toluene, ethylbenzene, xylene), PAH (Polycyclic Aromatic Hydrocarbons), TPH (Total Petroleum Hydrocarbons), TRH (Total Recoverable Hydrocarbons), PFAS (per- and poly-fluoroalkyl substances)

Schedule B3 of the NEPM (Guideline on Laboratory analysis of potentially contaminated soils) states that intra and inter laboratory duplicates should be collected at a rate of 5% each (a total of 10% duplicates). In total, 55 primary soil samples were analysed and 3 duplicate samples were analysed (5.5%), therefore we are slightly below the DQI. Since the RPD's between the duplicate and primary samples that were collected were generally low we do not consider that this omission will impact on the overall useability of the data set.

The PFAS NEMP 2.0 (2020) states that for PFAS analysis, duplicate samples (replicate and split samples) should be collected and analysed at a rate each greater than 1 in 20. As part of the investigation 27 primary samples were analysed for PFAS and 3 duplicate samples were collected (11%), therefore we are slightly below the DQI. Since the RPD's between the duplicate and primary samples that were collected were generally low we do not consider that this omission will impact on the overall useability of the data set.

8.4.2 Relative percentage difference (RPD)

Relative percent differences (RPD) were calculated using the method in Section 8.2.6 of AS4482.1-2005 and are presented in Table G4, Appendix G. The adopted control limits for RPD's were as follows:

- Less than 30%, where result is greater than 10 times limit of reporting (LOR)
- No limit where result is less than 10 times LOR.

RPDs above the control limits were recorded for the following analytes:

- TP21/0.0-0.1: primary sample recorded a PFOS concentration of 0.0050mg/kg, duplicate sample recorded 0.0009mg/kg (RPD = 139%)
- TP21/0.0-0.1: primary sample recorded a sum of PFHxS and PFOS concentration of 0.0062mg/kg, duplicate sample recorded 0.0009mg/kg (RPD = 149%)

The RPDs suggest some potential variability in PFAS concentrations and is likely to be associated with the heterogeneous nature of contaminant distribution in the soil matrix. Other RPDs were within the control limits.

8.4.3 Laboratory QA/QC

Laboratory QA/QC, including matrix spikes, laboratory method blanks and laboratory duplicates, were performed in accordance with the laboratory NATA accreditation and the requirements of the ASC NEPM, 2013. The laboratory Certificates of Analysis, Sample Receipt Advice/Notifications and CoC information are provided in Appendix H.

8.4.3.1 Spikes, Blanks and Duplicates

- For primary laboratory report ES2313155, ES2312740 and ES2314312 (ALS batches):
 - No method blank outliers were recorded
 - No laboratory duplicate outliers were recorded
 - No laboratory control outliers were recorded
 - No surrogate recovery outliers occurred
 - Some analysis holding time outliers occurred within ES2314312 only, as follows:
 - pH and conductivity analysis within samples EIL-TP10/0.0-0.1 were analysed 8 days out of holding time.
 - Some Matrix Spike (MS) outliers occurred within ES2313155 and ES2314312 only, as follows:

ES2313155

- Total Kjeldahl nitrogen as N (soil). Lab noted: MS recovery not determined, background level greater than or equal to 4x spike level.
- Total phosphorus as P (soil). Lab noted: MS recovery not determined, background level greater than or equal to 4x spike level. This is unlikely to be representative of sampled material, and thus is not expected to affect useability of sampled data.
- PAH, Phenols, pesticides PCB, TRH (water) did not meet laboratory duplicate expected frequencies, the expected duplicate frequency for these analytes was 10% but none were analysed. Given that the RPD results correlated well with the primary and field triplicate sample for these analytes, this is unlikely to significantly impact the interpretation of the data.
- PAH, Phenols, pesticides PCB, TRH did not meet the laboratory matrix spike expected frequencies, the expected matrix spike frequency for these analytes was 5% and none were analysed. Given that trip spike recoveries were within acceptable limits, this is unlikely to significantly impact the interpretation of the data.

ES2314312

Total metals by ICP-AES (soil). Lab noted: Laboratory matrix spike expected frequency was 5%, however none were analysed. Given that trip spike recoveries were within acceptable limits, this is unlikely to significantly impact the interpretation of the data.

ES2313155

- Laboratory duplicate analysis for moisture content in batch ES2313155 (10% was expected but only 9.86% was achieved).
- PAH, Phenols, PCB, TRH (water). laboratory duplicates and laboratory matrix spikes were below the expected frequencies of 10% and 5% respectively with no laboratory duplicates or matrix spikes being analysed in water. These omissions relate to the rinsate sample only, trip spike recoveries for volatile contaminants were within recovery limits and RPD data between primary and duplicate field samples was generally within the acceptable ranges.

- For secondary lab report 983682 (Eurofins batch) no laboratory QA/QC issues were noted.

The laboratory QA/QC outliers noted above are generally minor and are not expected to affect the overall useability of the dataset for the purposes of this assessment.

8.4.3.2 Laboratory limit of reporting

All laboratory limits of reporting were below the adopted assessment criteria.

8.4.4 QA/QC Summary

Based on the above data evaluation, SMEC consider the data to be useable for the purposes of this assessment.

9. Field and Laboratory Results

The following sections discuss the field and laboratory results from the fieldwork completed by SMEC as part of the DSI.

9.1 Subsurface Conditions

Test pit and hand auger logs are presented in Appendix E. Photographs of typical soil profiles and examples of the soil material observed during sampling are included in Appendix C.

A summary of subsurface conditions observed at test pit and hand auger locations during the DSI fieldworks is provided in Table 9-1 below:

Table 9-1 Summary of subsurface conditions observed at test pit locations.

Unit	Typical Description	Depth range to top of unit (m bgl)	Indicative thickness (m)	Locations/Photo Reference
FILL	Mulch, dark brown	0.0	0.1	TP08-A (Photo 29, Appendix C)
	SAND, fine grained, light brown/dark brown - Anthropogenic inclusions at TP08 (metals) - Potential asbestos containing material (ACM) identified at TP08-A	0.0-0.4	~0.1-1.0 Undetermined at TP08 and TP08-A (locations terminated within layer)	TP01, TP08-A, TP08-C, TP11, HA01 (Photo 30, 34 and 36, Appendix C)
	SILT, low plasticity, brown, grey	0.0-0.3	~0.1-0.3	TP02, TP03, TP06 to TP08, TP20, TP21, HA01 to HA03, HA06, HA10 (Photo 31, Appendix C)
	CLAY, medium to high plasticity, light brown	0.0-0.2	~0.2-0.5	TP01 to TP04, TP08-C, TP08-D, TP09, TP13, TP15, TP16, TP19, TP21, HA02 (Photo 32, Appendix C)
	Silty CLAY, low plasticity, trace gravels, light brown - Anthropogenic inclusions at TP08 (tiles, metal pipes) - ACM identified at TP08	0.0-0.4	~0.2-0.4	TP05, TP08, TP08-B, TP08-D, TP10 to TP14, TP17 to TP19, TP23 to TP25, HA03 to HA05, HA07 to HA15 (Photo 33, 34 and 37, Appendix C)
	CLAY, medium to high plasticity, red with grey mottle	0.1-0.5	Undetermined (locations terminated within layer)	All locations except TP08-A, TP08-D, TP21, and TP23 (Photo 32, Appendix C)
EXTREMELY WEATHERED ROCK	SHALE, grey with yellow	0.2	Undetermined (locations terminated within layer)	TP22, TP23 (Photo 35, Appendix C)

9.1.1 Staining and odours

No dark staining or unusual odours were noted within any of the testing locations.

9.1.2 Anthropogenic fill materials

Trace quantities of anthropogenic inclusions within fill materials were encountered at test pit TP08 and TP08-A comprising tile fragments, metal pipes, pieces of metal and potential ACM fragments.

9.1.3 Asbestos

During the excavation of Test Pit TP08, multiple fragments of suspected bonded asbestos containing material (ACM) fragments were observed within the western test pit wall at an approximate depth of 0.4-0.6m bgl. Two samples were collected to represent the fragments for laboratory analyses. The analyses showed that both fragments contained chrysotile and amosite asbestos. The fragments observed within TP08 appeared to be in a 'good condition' that is, not easily broken by hand pressure and they were >7mm, i.e. bonded and non-friable (refer to Photo 37, Appendix C).

Following conversations with DoE it was decided to attempt four 'step out pits' in four compass directions (i.e. north, south, east and west) around TP08 (TP08A (north), TP08B (west), TP08C (east), TP08D (south)), no apparent suspect ACM fragments were observed within TP08B and TP08C, however, one fragment was observed in TP08D at around 0.3m bgl (this was not analysed but assumed to contain asbestos and was observed to be 'good condition' and >7mm)) and multiple suspected fragments were observed in TP08A at around 0.8-0.9m bgl (this pit was dug through the mulch of the children's play area), some of the fragments within TP08A were observed to be in a 'poor condition' i.e. potentially friable asbestos (a 'poor condition' fragment was sampled and analysed for asbestos presence/absence, the fragment was shown to contain chrysotile and amosite asbestos, given the poor condition of some of the fragments observed within TP08B this asbestos would be considered potentially 'friable asbestos').

A graphical summary of asbestos finds is presented within Figure 9-1 below.



Figure 9-1 – Location of potential ACM finds within TP08 and TP08 series n 'step-out' pits.

9.1.4 Site walkover

A SMEC Senior Environmental Scientist attended the Site to carry out a site walkover on the 18 April 2023 to supplement additional observations from the PSI. The walkover focussed specifically on the southern portion of the school Site to make observations of the possible stormwater flow paths between the off-site RFS and the school Site (as WSP, 2021b had indicated that the main PFAS pathway between the two sites was via stormwater flow). Site observations are recorded below and are presented graphically on Figure 2, Appendix A.

- The School General Assistant (GA) indicated that residential properties along the south-eastern boundary of the school have a 'bio septic system' which treats the sewage and then sprays it onto the grass via sprinklers on their property, however, occasionally run-off drains onto the school property (i.e. across the Site's southern boundary).
- The School GA also noted that there had been some issues in the past with the septic tanks on the western boundary of the Site overflowing.
- The sports field within the south-eastern portion of the Site is topographically lower in comparison to the surrounding landscape on the northern, eastern, and southern sides, therefore surface water run-off from properties located immediately north, east and south of the Site would likely flow towards the School Site. As presented on Figure 2, Appendix A, shallow grassed drainage swale with intermittent stormwater pits are present along the northern and eastern boundaries of the sports playing field area. The drainage swale located along the Site's southern boundary (i.e. between the school Site and the RFS (and adjoining residential properties) is very shallow with no apparent stormwater drains. Overland flow entering the school Site from the adjacent RFS property to the south, would likely flow into the shallow drainage swale within the school Site and be funnelled westwards, however, after approximately 10-15m this drainage swale becomes very shallow and it is likely, that during heavy rainfall, stormwater may flow out of the end of the shallow drainage swale and northwards into the school Site. Figure 6-2 below shows an annotated photo depicting the above.

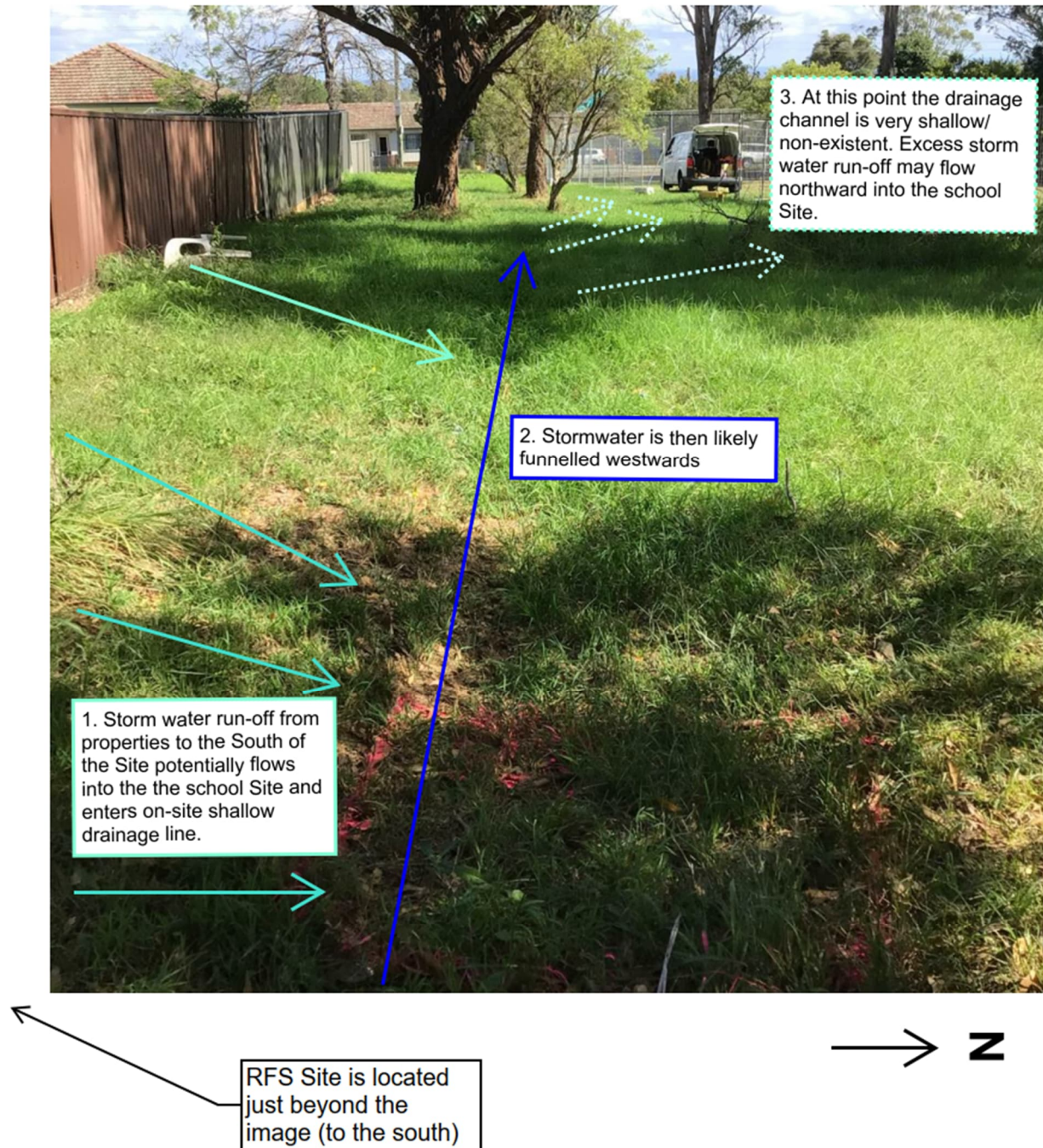


Figure 6-2 – Summary of stormwater flow pathway between the properties off-site to the south and the school Site

9.1.5 Field soils screening for VOCs

PID field screening results ranged from 0 to 8.2ppm generally indicating a low potential for volatile contamination within the sampled layers. PID records are provided in Appendix F.

9.1.6 Groundwater inflows

Groundwater seepage or inflow was not observed in the test pits or hand auger boreholes to the nominated excavation depths.

9.2 Laboratory Results

Tabulated analytical results are summarised in Table G1 to G3, Appendix G. The laboratory analysis reports are included in Appendix H. Exceedances of adopted assessment criteria are described in the sections below and are shown in Figures 4, Appendix A.

9.2.1 Health Criteria

The adopted health criteria was exceeded for the following analytes and samples:

- Multiple fragments of potential ACM were identified during excavation of test pit location TP08, TP08-B and TP08-D, the location of ACM fragments finds are presented on Figure 4, Appendix A:
 - Samples TP08-FC01 and TP08-FC02 were qualitatively assessed to be in a 'good' condition (i.e. could not be broken or crumbled by hand pressure, nor would they likely pass through a 7mm x 7mm sieve). Laboratory analysis of the fragments indicated the presence of chrysotile and amosite asbestos
 - Sample TP08-A-FC01 was qualitatively assessed to be friable (i.e. could be broken or crumbled by hand pressure). Laboratory analysis of the fragment indicated the presence of chrysotile and amosite asbestos.
- Adopted PFAS NEPM HIL A criteria for sum of PFHxS and PFOS (0.01 mg/kg) was exceeded in samples TP19-0.0-0.1 and TP20-0.0-0.1 (0.0356 mg/kg and 0.172 mg/kg respectively).

9.2.2 Ecological Criteria

The adopted ecological criteria was exceeded for the following analytes and samples:

- The adopted site specific EIL for zinc (310 mg/kg) was exceeded in sample TP04-0.0-0.1 (368 mg/kg).
- Adopted PFAS ecological indirect exposure guideline value for PFOS (0.01 mg/kg) was exceeded in samples TP19-0.0-0.1 and TP20-0.0-0.1 (0.0334 mg/kg and 0.167 mg/kg respectively).

9.2.3 Management Limits

No exceedances of adopted management limit criteria were recorded during the DSI.

9.2.4 Aesthetic Criteria

Trace quantities of anthropogenic materials including tile fragments, metal pipes, pieces of metal and potential ACM fragments were identified in the soil profiles at sample TP08 and TP08-A. Some anthropogenic materials may present an aesthetic issue or physical hazard if exposed or used in upper parts of recreational/landscape areas.

10. Discussion and Revised CSM

The following discussion is based on the results of the DSI with reference to the preliminary CSM and presented earlier in Section 5. A discussion for each AEC is described in sections below.

10.1 AEC 1 – Areas near former/existing building structures

Soils adjacent to building structures were tested at a selection of accessible locations as part of the DSI. The soil samples were analysed for the CoPC and no exceedances were recorded suggesting the potential for widespread contamination from this source is low. The PSI indicated that the majority of structures occurred in the northern part of the Site. The sampling of this area is considered preliminary due to the presence of existing pavements and building footprints. Access limitations also required sampling with a hand auger from which there are limitations in the ability to observe ACM fragments.

When details of known disturbance areas for the proposed activity are known, further assessment could be carried out to target those areas to increase the confidence in the assessment and avoid unexpected finds, otherwise works could be managed through an unexpected finds procedure.

It should be noted that hazardous materials may have been used in the construction of on-site structures but an assessment of this is beyond the scope of this investigation.

10.2 AEC 2 - Historical on-site and offsite firefighting activities

This investigation found PFAS within on-site soils at concentrations which exceeded the adopted human health and ecological criteria at two locations (TP19 and TP20) in the south-west portion of the Site. The location of the exceedances correlates with the southern boundary in proximity to the offsite RFS station. The location of the exceedances lie in an area that could be influenced by runoff from the RFS and could be in an area within and proximal to a grassed swale. Based on this and other exceedances recorded by WSP, we do not consider that use of statistics such as 95% upper confidence limits is currently suitable for application to a broader area.

We understand that remediation of the RFS and adjacent properties is yet to be carried out and continued migration of PFAS could be probable from offsite sources.

The data included in the WSP (2021b) report shows that multiple soil samples collected from the school Site recorded concentrations of PFAS above HIL A human health criteria, but below the site specific human health criteria developed by the human health risk assessment. The risk assessment and all previous related reports have not been made available to SMEC.

The significance of the recorded exceedances with respect to health and ecological impacts could be further assessed through risk assessment. We however note that the presence of residual PFAS in soil, even though it may be below health/ecological criteria, could still impact the proposed activity (either now or in the future) due to potential increased costs in offsite soil disposal (if this is necessary) as it may affect the soil classification.

WSP also reported PFAS within an on-site groundwater bore (GW05) above drinking water criteria (noting that no drinking water receptors were identified).

This DSI did not directly assess groundwater quality from the perspective of the proposed activity works as these works are unlikely to intersect groundwater.

10.3 AEC 3 - Whole Site from fill of unknown origin and/or quality

Forty four sample locations across the site were excavated, with fill materials observed at all locations typically to depths between 0.1m and 0.5m. Locally deeper fill was found in the area of TP08 (A-D) up to greater than 1.1m. The fill appeared to be topsoil fill in upper layers and generally clayey fill deeper. Trace quantities of anthropogenic inclusions were encountered in TP08, TP08-B and TP08-D including some fragments of possible ACM. Some selected fragments of ACM were tested and shown to contain asbestos. Some step out test pits were excavated in this area, but the extent of asbestos is not clearly defined by these initial test pits. Statistical assessment for asbestos is not relevant.

Zinc exceeded adopted site specific ecological criteria in one sample (TP04/0.0-0.1). The source of the zinc is not known and could be either from fill or possibly AEC 4 (Historical agricultural activities, including offsite). The concentration recorded (368mg/kg) slightly exceeds the adopted criteria of 310mg/kg. This exceedance was near the Site boundary. EIL's are based on lowest observed effect concentration (LOEC), the LOEC is the lowest concentration used in a toxicity test that can cause a toxic effect. In relative terms, the exceedances do not appear excessive. Observations of on-site vegetation did not show indicators of die back or plant stress. NEPM (2013) states that, in general, the toxicity of soil contaminants will reduce or age over time to a lower or more stable level by binding to various soil components and decreasing their biological availability. Given the likely age of fill at TP04 and the relatively low-level exceedance of the conservative assessment criteria, we consider that the recorded zinc concentration in TP04/0.0-0.1 is likely to present a low risk to identified ecological receptors.

PFAS exceedances were recorded in fill but are considered to be associated with AEC 2 as discussed earlier.

10.4 AEC 4 - Historical agricultural activities

Zinc exceeded adopted site specific ecological criteria in one sample (TP04/0.0-0.1). As discussed in AEC 3 above, the source is unknown and in the context of the proposed activity not considered significant.

Other metals and OCP/OPP were not recorded above adopted assessment criteria in any other testing locations.

10.5 AEC 5 - Septic Tanks

We note that due to a field omission, samples were not analysed near the septic tanks (AEC 5) and assessment of this area cannot currently be made. This can be temporally affected and sampling may not represent conditions post an overflow. If overflows occur then this could lead to unacceptable exposure and should be managed.

10.6 AEC 6 - On site historical farm dam sediments

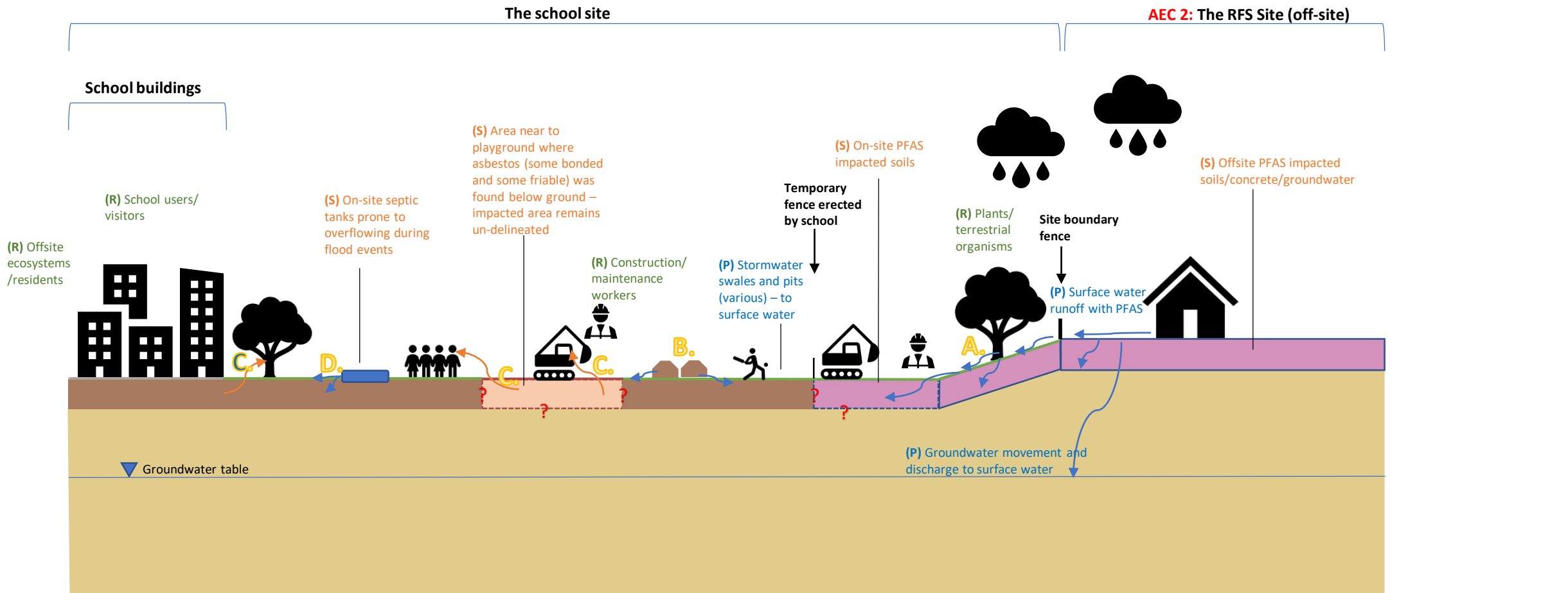
The approximate location of the former farm dam was targeted with one test pit (TP11). The test pit encountered 0.3m of fill material comprising clay overlying sand with no apparent visual/olfactory indicators of contamination. Two soil samples were selected for analysis and no exceedances above the adopted criteria were recorded. It is probable that the former dam sediments (if any) were removed as part of previous school redevelopment works and establishment of the sports field. The likelihood of contamination in this area from this AEC is therefore considered low.

10.7 Revised CSM

Table 10-1 below provides a revised CSM with Source-Pathway-Receptor (S-P-R) linkages and the CSM is also shown diagrammatically in Figure 7-1.

Table 10-1 Revised CSM and S-P-R Linkages

Source		Potential Pathway		Potential Receptor (s)	S-P-R Linkage
Primary	Secondary	Migration Pathway(s)	Exposure Pathway(s)		
Asbestos near TP08	-	- Exposing soil during earthworks - Erosion - Exposed soil/wind blown	Inhalation of soil dust	- Future users of the site e.g. students and staff - Site workers during future construction works or maintenance activities - Off-site residential receptors (from wind-blown dusts/fibres)	Plausible if disturbed and not managed
PFAS from past firefighting training (AEC 2)	PFAS in soil	- Exposing soil during earthworks - Erosion	- Dermal contact - Inhalation of soil dust - Incidental ingestion (human)	- Future users of the site e.g. students and staff - Site workers during future construction works or maintenance activities - Off-site residential receptors (from wind-blown dusts/fibres) - Onsite ecological receptors (terrestrial organisms, transitory wildlife, including predators)	Unlikely (Terravale (2023) health risk assessment indicated risks were low and acceptable)
	PFAS in Groundwater	Transport in groundwater to surface water	- Dermal contact - Incidental ingestion (human)	- Offsite ecological receptors (nearby water ways) - Recreational users - Consumers of food (if relevant)	Groundwater, surface water and sediment (on-offsite) was outside the scope of this DSI. The source is from offsite and responsibility of others. WSP (2021b) suggested risks were low.
	PFAS in Surface water/ stormwater/sediment	Transport through stormwater and offsite	Ingestion (biota)		



Receptor legend



Represents existing users of site including children, teachers and maintenance staff



Represents Construction workers during construction phase and future site maintenance staff/operational workers



Represents on-site plants/terrestrial organisms

Sources (S)

AEC 2 - Off-site PFAS impacted Sites (e.g. the RFS and adjacent properties)
AEC 3 - On-site contaminated fill impacted with PFAS, asbestos (specific areas only)
AEC 5 - Septic tanks prone to on and off-site overflow

Pathways (P)

A. Storm water run-off from off-site onto the Site, followed by contamination of on-site soils, followed by human health exposure (dermal contact, ingestion) and/or ecological exposure via ingestion (biota) and/or plant uptake
B. During construction phase, storm water run-off from impacted stockpiles may flow to other areas of the Site causing further contamination via dermal contact and ingestion to humans or via plant uptake.
C. During construction phase (or existing use of the Site e.g. children digging into soils/eating soils), contaminated soils may be exposed (human health receptors may be exposed via ingestion, dermal contact, inhalation of fibres/contaminated dusts)
D. Pathogens from faecal material leaching from on and off-site septic tanks during storm/flood events and contaminating on-site soils followed by exposure of humans via ingestion, dermal contact.

Receptors (R)

1. Existing and future users of the Site eg students, teachers, maintenance staff etc
2. Construction workers during construction phase
3. Future site maintenance/operational workers and visitors
4. On-site receptors and nearby off-site human health receptors from windblown fibres/contaminated dusts during construction works
5. On-site terrestrial organisms i.e. the protect tree species located in the southern portion of the Site

Figure 10-1: Potentially complete contamination source, pathway and receptor linkages

10.8 Duty to Report Contamination

The NSW EPA (2015) Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 provide guidance on when an owner of property or person whose activities have contaminated land may have a duty to report contamination to the NSW EPA. Certain triggers are discussed in the guidelines including for soil and groundwater for on and offsite.

Based on our review of the guidelines and the results of this assessment, we consider:

- Potentially friable asbestos has been identified in one test location at the Site, however, the asbestos impacted soils appear to be associated with a fill layer generally located at >0.4m bgl, although friable asbestos may be present at the Site a person is not currently nor will foreseeably be exposed to elevated levels of asbestos so long as the asbestos remains buried. If this area is proposed to be disturbed during construction, there may be a foreseeable exposure risk and therefore there may be a duty to report contamination.
- PFAS has been identified in shallow soils within the southern portion of the Site, the Duty to Report guidelines do not explicitly mention PFAS and there is currently not enough data available to make a determination to report.

11. Conclusions

The Detailed Site Investigation (DSI) included developing and executing a sampling, analysis and quality plan which included sampling soils from 44 sample locations across the Site using a combination of judgemental and systematic sampling to assess the previously identified AECs (AEC 1 to 6).

Testing locations were excavated to a maximum depth of 1.1m bgl, no groundwater seepage/inflows etc were observed. The majority of testing locations were excavated to the top of natural soils. Fill soil, generally comprising sand, silt, clay and silty clay was observed at the Site to a depth of generally less than 0.5m bgl. Natural residual soils were encountered across the Site and were generally noted to comprise medium to high plasticity clay with weathered shale bedrock encountered at two locations.

Soil contamination exceeding the adopted assessment criteria was noted as summarised below:

- Laboratory analysis indicated that PFAS (PFOS and sum of PFHxS and PFOS) exceeded the adopted human health criteria within two test pits located proximal to the Site's southern boundary and potentially located within a stormwater run-off area inferred to be from the offsite RFS site. PFOS was also recorded in both these testing locations at levels which exceeded adopted ecological criteria. We understand that the School have now placed temporary fencing in this area to limit access to the locations where these exceedances were recorded as a temporary measure.
- During the excavation of Test Pit 08 (TP08) (located adjacent the children's play area – southern portion of the Site), multiple fragments of suspected bonded asbestos containing material (ACM) fragments were observed within the western test pit wall at an approximate depth of 0.4-0.6m bgl. Two representative samples were collected for laboratory analyses, the analyses showed that both fragments contained chrysotile and amosite asbestos. The fragments were qualitatively assessed to represent 'bonded asbestos'. Four 'step out' pits were then excavated, one fragment of 'bonded' ACM was encountered within TP08D at 0.3m bgl. TP08A was excavated through the children's play area (located approximately 4-5m north of TP08), at approximately 0.8-0.9 bgl multiple suspected asbestos fragments were observed some of which were qualitatively assessed to be in a 'poor' condition and therefore considered to be potentially friable asbestos.
- A single zinc exceedance was recorded above the adopted Site specific ecological criteria. The exceedance was not considered significant in the context of the proposed activities as per the lines of evidence discussed in this report.
- We note that due to fieldwork omission, faecal coliforms analysis was not undertaken at AEC5, therefore this AEC has not currently been fully assessed.

A revised CSM was developed which indicates that there are plausible source-pathway-receptor linkages with respect to the PFAS and asbestos contamination identified. Works carried out on behalf of RFS by WSP and Terravale included a health risk assessment (Terravale, 2023), which concluded that:

- Risks are low and acceptable for primary school students, based on daily exposures to the maximum PFOS+PFHxS concentration detected in soil near the southern school boundary.
- Risks are low and acceptable for adult workers at the primary school, assuming daily exposures to the maximum PFOS+PFHxS concentration detected in soil near the southern school boundary.

Based on the results of the DSI and reports provided by DoE, further assessment along with possible remediation/management of the identified soil asbestos contamination will be required to make the Site suitable for the proposed activity. Further assessment should be carried out prior to construction.

Groundwater quality was not directly assessed in this investigation as it is unlikely to be intersected as part of proposed activity. Based on the observations and soil analytical results, the likelihood of widespread groundwater impact as a result of the former Site activities that would pose an unacceptable risk to either the proposed high school or nearby receptors is considered to be low (with the exception of PFAS). The Site is in an area that had previous agricultural related activities and some slightly elevated contaminant levels such as nutrients could be expected, but would be a broader diffuse source, rather than just solely related to the Site.

With respect to PFAS in groundwater, we consider that this is an issue related to offsite impacts which are being assessed and managed by Liverpool City Council and NSW and RFS. Whilst the proposed activity may not be adversely affected by PFAS in groundwater if works are not intersecting the water table, future risks and liabilities associated with the offsite source may need to be addressed between DoE and RFS.

Based on our review of the NSW EPA (2015) Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997, we infer that the contamination identified in its current form either does not meet the triggers for notification or requires further data to make this assessment.

12. Recommendations and Mitigation Measures

12.1 Recommendations

Based on the results of this DSI SMEC consider that the Site can be made suitable from a contamination perspective for a future land use as a public school, subject to the recommendations below:

- DoE should consider if they are willing to accept reliance on work carried out by RFS. If this is considered acceptable, further assessment of the significance of the PFAS soil exceedances does not appear to be warranted. DoE should note that the presence of residual PFAS in soil, even though it may be below health/ecological criteria, could still impact the proposed activity financially (either now or in the future) due to potential increased costs in offsite soil disposal (if this is necessary) as it may affect the soil classification. DoE has indicated that RFS is proposing improvement works in the southern part of the school involving excavation to depths of between 0.3m and 0.5m to reduce the mass and potential for ongoing release of PFAS to provide environmental benefit only. We further understand it has been agreed that these works will be the responsibility of Liverpool City Council and RFS (as the PFAS source is from the RFS site adjacent to the school) and carried out under a suitable Remedial Action Plan (or similar), also prepared by Liverpool City Council and RFS.
- Consultation should be carried out with RFS in relation to preventing any further migration of PFAS to the school Site through either remediation or management. Addressing impacts at the school in isolation of removing or preventing migration from the offsite source Site could risk re-contamination.
- With regards to the asbestos identified in the children's play area, we understand that DoE engaged an appropriately licenced asbestos hygienist to clear the surface soils in this area for asbestos with respect to ongoing school activities in the interim. NSW Department of Education (DoE) arranged for a Site-Specific Asbestos Management Plan to also be developed to address DoE's obligations under the NSW Work Health and Safety Regulation 2017 and NSW Work Health and Safety Act 2011 as it relates to the presence of asbestos in grounds, by managing and minimising asbestos related health risks to personnel working on or visiting the site (WSP, 2023). Assessment of the clearance certificates and management plan is outside of SMEC's engagement. As some of the asbestos has been found at depths less than 0.5m and the exact historical source is not well known, further assessment of this area is recommended to assess the extent and degree of contamination prior to construction.
- Upgrade of the septic system to prevent future overflows occurring including further assessment prior to or as part of the upgrade forming part of the proposed activity
- The density of investigation locations near existing and former historical structures (AEC 1) was generally low due to access from existing pavements and buildings. When details of known disturbance areas for the proposed activity are known, further assessment could be carried out prior to construction to target those areas to increase the confidence in the assessment and avoid unexpected finds, otherwise works could be managed through an unexpected finds procedure. We note that ACM can be difficult/costly to manage if later found post mixing into soil stockpiles as part of bulk earthworks
- Removal of all hazardous building materials from structures that require demolition in accordance with relevant regulations and codes along with adequate assessment and clearance prior to demolition to avoid introduction of contaminants to the ground.

12.2 Mitigation Measures

Mitigation measures are required for a Review of Environmental Factors (REF) and are actions or measures to avoid, minimise, rectify (by repairing, rehabilitating or restoring) and/or reduce or eliminate over time (by preservation and maintenance) the adverse environmental impacts of a Division 5.1 activity. Mitigation measures specific to contamination with respect to the proposed activity are provided in Table 12-1

Table 12-1 Mitigation Measures

Mitigation Number/ Name	Aspect/Section	Mitigation Measure	Reason for Mitigation Measure
1. PFAS	PFAS management	- Providing a solution to preventing further migration of PFAS from the RFS offsite onto the school site, including documenting in a Remedial Action Plan and implementation - Improvement works as may be agreed with RFS for environmental benefit	To reduce potential for adverse health and ecological impacts from PFAS from offsite
2. Asbestos in soil	Asbestos in children's play area	- Adherence to Site-Specific Asbestos Management Plan - Further assessment of the degree and extent of asbestos contamination - Remediation and validation of asbestos impacts	To reduce risk of adverse impacts from presence of asbestos
3. Septic system	Overflows from septic system	Upgrade the septic system to prevent future overflows occurring including further assessment prior to or as part of the upgrade forming part of the proposed activity	To reduce potential of health impacts from exposure to septic system overflows
4. Managing unexpected finds	Northern part of Site	Develop and implement an unexpected finds procedure for construction works where ground interaction is required.	To have a mechanism of dealing with unexpected finds
5. Asbestos in structures	Demolition	Removal of all hazardous building materials from structures that require demolition in accordance with relevant regulations and codes along with adequate assessment and clearance prior to demolition	To avoid introduction of contaminants to the ground.

13. References

Australian Standard AS4482.1-2005 Guide the investigation and sampling of site with potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds.

Friebel and Nadebaum (2011) Health screening levels for petroleum hydrocarbons in soil and groundwater, part 1: Technical development document, Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE Pty Ltd) Technical Report Series No. 10.

Gyde Consulting (2022), Draft Due Diligence Report - Austral Public School 205 Edmondson Avenue, Austral. Prepared for School Infrastructure NSW

Greencap (2017)/Aurecon (2021), Asbestos Register - Hazardous Materials and Risk Assessment - Austral Public School (1077)

NEPC (2013) National Environmental Protection (Assessment of Site Contamination) Measure 1999, as amended in 2013, National Environment Protection Council

National Environment Protection Council (2013) Assessment of Site Contamination NEPM Toolbox.

NSW EPA (2020) Contaminated Land Guidelines: Consultants Reporting on Contaminated Land

NSW EPA (2022) Sampling Design Guidelines

NSW EPA, Waste Classification Guidelines - Part 1: Classification of waste, dated November 2014

Pedavoli Architects (2024) Overall Site Plan (Ref: APS-PA-00-ZZ-DR-A-DA_005 Rev B, dated 9/2/2024

PFAS National Environmental Management Plan V2.0 (2020)

State Environmental Planning Policy (Resilience and Hazards) 2021.

SMEC (2023), Austral Public School: Preliminary Site Investigation, prepared for Schools Infrastructure NSW, ref no.: SINSW03039/22, dated 15 March 2023

Terravale Consulting Pty Ltd (2023) Human Health Risk Assessment (HHRA) of PFAS in Soil in On- and Off-site Areas of the Austral RFS Facility, 59 Ninth Street, Austral, NSW (Ref: 20030_1d_RevFinal, dated 5 September 2023)

WSP (2021a) Validation report: Austral Public-School Oval Excavation, 205 Edmondson Avenue, Austral

WSP (2021b) PFAS Environmental Site Assessment: Former NSW RFS Fire Station, 59th Avenue, Austral, NSW

WSP (2023) Austral Public School, Asbestos In Grounds Management Plan (Ref: 1077_ASB_160523_AMP, dated 16 May 2023)

WSP (2023a) Review of PFAS in Soil at Austral Public School (Ref: PS205770-SYD-CLM-LTR-RFSAPS Rev2, dated 11 August 2023)

Appendix A

Figures



FIG NO. 1	FIGURE TITLE Site Location - Austral Public School 219 Edmondson Avenue, Austral, NSW 2179	DATE 10/05/2023	050100200300 1:7,500Meters	PAGE SIZE A3	COORDINATE SYSTEM GDA2020 MGA Zone 56	© SMEC Australia Pty Ltd 2023. All Rights Reserved Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this map is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.  Member of the Surbana Jurong Group
PROJECT NO. 30018043	PROJECT TITLE: Upgrade to Austral Public School - Detailed Site Investigation (DSI)	CREATED BY FA13847	SOURCES Roadnet MDS 2020, Parcel and DEM © DCS Spatial Services, MetroMap Imagery © Aerometrex Pty Ltd,			



FIG NO. 2	FIGURE TITLE Site Layout - Austral Public School 219 Edmondson Avenue, Austral, NSW 2179	DATE 12/05/2023	0 5 10 20 30 40 50 1:1,500 Meters	PAGE SIZE A3	COORDINATE SYSTEM GDA2020 MGA Zone 56	© SMEC Australia Pty Ltd 2023. All Rights Reserved
PROJECT NO. 30018043	PROJECT TITLE: Upgrade to Austral Public School Detailed Site Investigation (DSI)	CREATED BY FA13847	SOURCES Roadnet MDS 2020, Parcel and DEM © DCS Spatial Services, MetroMap Imagery © Aerometrex Pty Ltd,	Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this map is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.		

LEGEND

Areas of Environmental Concern

AEC 1 - Areas near former/existing building structures from weathering and/or ineffective demolition of hazardous building materials

AEC 2 - Historical on-site and offsite firefighting activities potentially involving PFAS containing firefighting foam

AEC 3 - Whole Site from fill of unknown origin and/or quality. Also, several small suspected fill mounds were identified during site walkover

AEC 4 - Historical agricultural activities and potential application of pesticides for sports ovals onsite and off-site agricultural activities associated with poultry farms

AEC 5 - Septic Tanks prone to overflowing during heavy rainfall. Off-site septic tanks belonging to residents in the southern portion of the site has been known to leak and flow onto the site

AEC 6 - On site historical farm dam sediments and fill which may have received run-off from surrounding land and could have acted as a sink for contamination

Building Structures

Existing Structure (AEC 1)

Former Structure/Demolished (AEC 1)

Site Boundary

Note: Dates presented for structures are dates where the structure is visible on aerial images reviewed (1930, 1949, 1955/56, 1961, 1965, 1970, 1978, 1982, 1986, 1991, 1994, 2000, 2005, 2011, 2016 and 2022) and not actual construction and demolition dates. For example a structure visible until 1965 means it was demolished sometime between 1965 and 1970.

FIG NO. 3	FIGURE TITLE Areas of Environmental Concern - Austral Public School	DATE 12/05/2023	0 5 10 20 30 40 50 1:1,500 Meters	PAGE SIZE A3	COORDINATE SYSTEM GDA2020 MGA Zone 56
PROJECT NO. 30018043	PROJECT TITLE: Upgrade to Austral Public School Detailed Site Investigation (DSI)	CREATED BY FA13847	SOURCES Roadnet MDS 2020, Land Parcel and DEM © DCS Spatial Services, MetroMap Imagery © Aerometrex Pty Ltd		

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Location: X:\Projects\300180\30018043 - SINSW Projects\100 Data\GIS\Maps\DSI 2023 - Austral\30018043_DSI_AUS_F0003_AEC.mxd or X:\Projects\300180\30018043 - SINSW Projects\100 Data\GIS\Maps

Last updated by: FA13847 on 12/05/2023 at 13:41

LEGEND

- Hand Auger Location
- Test Pit Location
- Site Boundary
- Exceeds ecological criteria
- Exceeds ecological criteria (PFAS)
- Exceeds human health criteria
- Exceeds human health criteria (PFAS)

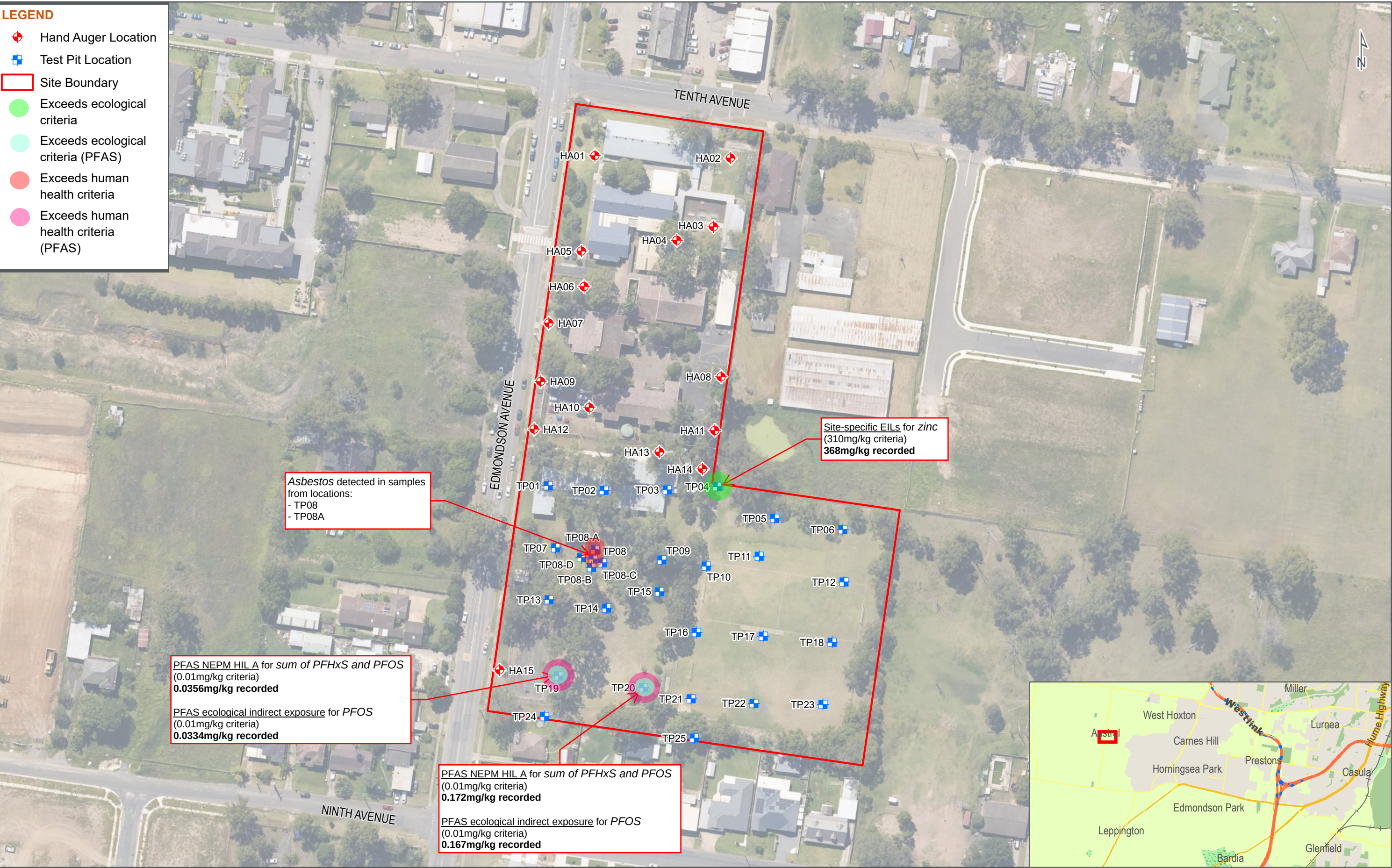


FIG NO. 4	FIGURE TITLE Sampling Locations - Austral Public School 219 Edmondson Avenue, Austral, NSW 2179	DATE 12/05/2023	0 5 10 20 30 40 50 1:1,500 Meters	PAGE SIZE A3	COORDINATE SYSTEM GDA2020 MGA Zone 56	© SMEC Australia Pty Ltd 2023. All Rights Reserved
PROJECT NO. 30018043	PROJECT TITLE: Upgrade to Austral Public School Detailed Site Investigation (DSI)	CREATED BY FA13847	SOURCES Roadnet MDS 2020, Parcel and DEM © DCS Spatial Services, MetroMap Imagery © Aerometrex Pty Ltd, Cumberland Plain Vegetation © Office of Environment and Heritage NSW; © NSW National Parks and Wildlife Service, 2002.			Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this map is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.



Appendix B

Data Quality Indicators

DQIs for the project will be based on the field and laboratory considerations in NEPM Schedule B2 Appendix B, (NEPC 1999), which include:

- Completeness – a measure of the amount of useable data (expressed as %) from a data collection activity;
- Comparability – the confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event;
- Representativeness – the confidence (expressed qualitatively) that data are representative of each media present on the site;
- Precision – a quantitative measure of the variability (or reproducibility) of data; and
- Accuracy – a quantitative measure of the closeness of reported data to the true value.

The DQIs adopted for this assessment and checking of compliance is discussed in Table D1 to D5 below.

Table D1 – Data Quality Indicators: Completeness

Completeness					
Field considerations	DQI	DQI Compliance	Laboratory considerations	DQI	DQI Compliance
All critical locations will be sampled	Samples will be collected as per Section 8	Yes, with minor exception (refer to Section 8.1)	All critical samples analysed.	Samples will be analysed as per Section 8	Yes
All samples collected	Samples will be collected from relevant media as per Section 8	Yes	All analytes analysed according to sampling plan	Samples will be analysed as per Section 8	Yes
SOPs appropriate and complied with	SMEC SOPs/Field instructions will be implemented	Yes	Appropriate methods and limits of reporting	Samples will be analysed by laboratories NATA accredited for the analyses to be performed and appropriate methods will be used. LORs will be less than or equal to the assessment criteria.	Yes
Experienced sampler	An experienced SMEC environmental consultant will conduct the sampling	Yes	Sample documentation complete	CoCs will be returned, signed, and dated by laboratory. NATA endorsed laboratory certificates will be completed in accordance with NEPC (1999). Field documentation will be completed in accordance with SMEC SOPs/Field instructions.	Yes (refer to Appendix H)
Documentation correct	Samples will be handled and transported under appropriate chain of custody documentation. Sample Receipt Advice (SRA) (or equivalent) from the laboratory will be reviewed to assess that samples are received cool and in good condition. Calibration certificates for the field instruments will be provided daily.	Yes	Sample holding times complied with	Samples will be analysed within holding times specified by NEPC (1999, amended 2013)	Yes with minor exception (refer to Section 8.4.1.1)

Table D2 – Data Quality Indicators: Comparability

Comparability					
Field considerations	DQI	DQI Compliance	Laboratory considerations	DQI	DQI Compliance
Same SOPs/Field instructions used on each occasion	SMEC SOPs/Field instructions will be implemented	Yes	Same sample analytical methods used	The same NATA accredited laboratory will be used to undertake analyses of all primary samples collected for this study. The laboratory will use the same analytical methods for each sample for each analytical parameter	Yes
Experienced sampler	An experienced SMEC environmental consultant will conduct the sampling.	Yes	Same sample limits of reporting (LOR)		Yes
Climatic conditions (temperature, rainfall, wind, barometric pressure...)	Ideally, PFAS data should be collected during good weather conditions (i.e. no rain).	Yes	Same laboratories (justify/quantify if different)		Yes
Same types of samples collected	Samples will be collected in the appropriate laboratory supplied container specific to the analyses performed.	Yes	Same units (justify/quantify if different)		Yes

Table D3 – Data Quality Indicators: Representativeness

Representativeness					
Field considerations	DQI	DQI Compliance	Laboratory considerations	DQI	DQI Compliance
Appropriate media sampled according to sample plan	Samples will be collected and analysed as listed in Section 8. Any variations will be justified.	Yes	All samples analysed according to sample plan	Samples will be collected and analysed as listed in Section 8. NATA accredited environmental testing laboratories will implement a quality control plan conforming to Schedule B(3) 'Guideline on Laboratory Analysis of Potentially Contaminated Soils' of the National Environment Protection (Assessment of Site Contamination Measure 1999 as amended (NEPC, 1999).	Yes with minor exception (refer to Section 8.1)
All media identified in sample plan sampled	Samples will be collected and analysed as listed in Section 8.	Yes	All samples analysed according to sample plan	Samples will be collected and analysed as listed in Section 8.	Yes

Table D4 – Data Quality Indicators: Precision

Precision					
Field considerations	DQI	DQI Compliance	Laboratory considerations	DQI	DQI Compliance
SOPs appropriate and complied with	SMEC SOPs/Field instructions will be implemented	Yes	Analysis of laboratory duplicates	The number of duplicate analyses should be the smaller of one per process batch or one per 10 samples.	Yes
Analysis of: field duplicates	Collection of field duplicate samples including: - Field intra-laboratory duplicate samples (1 in 20 samples). - Field inter-laboratory duplicate samples (1 in 20 samples). Note: Field duplicates excluded for asbestos presence/absence testing	Yes with minor exception (refer to Section 8.4.1.7)	Analysis of: field duplicates	Field duplicates have relative percentage difference (RPD) control limits: - Less than 30% (soil) where result is greater than 10 times limit of reporting (LOR). - No limit where result is less than 10 times LOR.	Yes, minor exceptions (refer to Section 8.4.2)
	Experienced and trained staff to carry out sampling. Sampling methodologies appropriate and complied with.	Yes	Analysis of: laboratory duplicates	Laboratory duplicates have relative percentage difference (RPD) control limits: - Results <10 times the LOR: No Limit - Results between 10-20 times the LOR: RPD must lie between 0-50% - Results >20 times the LOR: RPD must lie between 0-30% In accordance with laboratory specific QC Acceptance criteria.	Yes
			Analysis of: laboratory-prepared volatile trip spikes	Trip spikes recoveries were recorded between 60% and 110% for volatile contaminants (TRHC6-C10/BTEX)	Yes
			Analysis of: laboratory-prepared volatile trip blanks	Trip blanks were free of detectable concentrations of volatile contaminants (TRHC6-C10/BTEX)	Yes

Table D5 – Data Quality Indicators: Accuracy (Bias)

Accuracy (bias)					
Field considerations	DQI	DQI Compliance	Laboratory considerations	DQI	DQI Compliance
SOP appropriate and complied with	SMEC SOPs/Field instructions will be implemented	Yes	Analysis of field blanks	A laboratory prepared trip blank will be analysed for soil sampling (as defined in AS4482.2-1999 and NEPC (1999). Results are to be less than the LOR	Yes
Rinsate blank	Where reusable sampling equipment is utilised (if any) a rinsate blank will be analysed and results compared against the PQL.	Yes	Analysis of method blank	Method blanks will be analysed as per NEPC (1999) at least 1 per process batch (typically 1 in 20). Results to be less than LOR	Yes
Trip spike	One BTEX trip spike will be taken in the field and analysed. DQI - recoveries to be within 70% - 130% for organics	Yes	Analysis of matrix spike	Matrix spikes will be analysed as per NEPC (1999) (one matrix spike per soil type per process batch). Results to be within laboratory acceptance limits based on NEPC (1999). Acceptance limits are on the laboratory certificates (typically 70-130%, depends on analyte. A lower range typically accepted for phenols 30%-130%)	Yes, minor exceptions (refer to Section 8.4.3.1)
Preservation, transport, and storage	Samples appropriately preserved in laboratory supplied containers, stored, and transported correctly and within holding times	Yes	Analysis of surrogate spike	Surrogates will be analysed as per NEPC Schedule B3 (1999). All samples spiked where appropriate (e.g. chromatographic analysis of organics). Acceptance limits 70% to 130% (inorganics), or 50% to 150% (organics).	Yes
			Analysis of laboratory control samples	LCSs will be analysed as per NEPC Schedule B3 (1999) (at least 1 per batch). Results to be within laboratory acceptance limits based on NEPC (1999). Acceptance limits are on the laboratory certificates (typically 70-130%, depends on analyte)	Yes
			Analysis of laboratory-prepared spikes	LPS will be analysed as per NEPC Schedule B3 (1999). Recovery results to be within laboratory acceptance limits based on NEPC Schedule B3 (1999). Acceptance limits are on the laboratory certificates.	Yes, minor exceptions (refer to Section 8.4.3.1)

Appendix C

Photographic Log

Appendix E – Photographic Logs



Photo 1: Main Access Gate (taken 05/07/2022).



Photo 2: Carpark Access Gate (taken 05/07/2022).



Photo 3: Example of school buildings, photograph taken facing east (taken 05/07/2022).



Photo 4: Example of school buildings, photograph taken facing east (taken 05/07/2022).



Photo 5: Example of school buildings and concrete playing court, photograph taken facing south (taken 05/07/2022).



Photo 6: Example of school building, footpaths and grassed areas, photograph taken facing south (taken 05/07/2022).



Photo 7: Example of hardstand adjacent to grassed areas, and planter boxes, photograph taken facing west (taken 05/07/2022).



Photo 8: Entrance gate on Tenth Avenue, and example of grassed and concrete hardstand areas, and planter boxes, photograph taken facing west (taken 05/07/2022).



Photo 9: Entrance gate and carpark located off Edmondson avenue, photograph taken facing south-west (taken 05/07/2022).



Photo 10: Photograph of the school field, photograph taken facing east (taken 05/07/2022).



Photo 11: Photograph of the school field, photograph taken facing north (taken 05/07/2022).



Photo 12: Photograph of trees lining the eastern perimeter of the School field photograph taken facing south-east, (taken 05/07/2022).



Photo 13: Example of open drainage line along the east perimeter of the field, photograph taken facing north (taken 05/07/2022).

Photo 14: Example of open drainage line along the south perimeter of the field, photograph taken facing west (taken 05/07/2022).



Photo 15: Example of stormwater pit located along the east perimeter of the field, photograph taken facing north (taken 05/07/2022).



Photo 16: Example of stormwater pit located along the east perimeter of the field, (taken 05/07/2022).



Photo 17: Example of slope (sloping west) in the south-east corner of the field, photograph taken facing south (taken 05/07/2022).



Photo 18: Example of raised area / slope along the south and east boundary of the field, photograph taken facing south-west (taken 05/07/2022).



Photo 19: Photograph of the south-west portion of Site, photograph taken facing north (taken 05/07/2022).



Photo 20: Photograph of the school cricket cage and field, photograph taken facing north (taken 05/07/2022).



Photo 21: Cricket cage and pitch, photograph taken facing west (taken 05/07/2022).



Photo 22: Photograph of basketball court and fenced off shed, photograph taken facing south-west (taken 05/07/2022).



Photo 23: Photograph of observed mound, photograph taken facing north (taken 05/07/2022).



Photo 24: Photograph of observed mound, photograph taken facing east (taken 05/07/2022).



Photo 25: Example of rainwater tanks observed onsite, photograph taken facing north (taken 05/07/2022).



Photo 26: Storage container observed onsite, photograph taken facing west (taken 05/07/2022).



Photo 27: Photograph of above-ground tank, photograph taken facing east (taken 05/07/2022).



Photo 28: Photograph of above-ground tank, photograph taken facing north (taken 05/07/2022).



Photo 29: Photograph of Mulch (TP08-A) observed during site investigation



Photo 30: Example of SAND material observed during site investigation



Photo 31: Example of SILT material observed during site investigation



Photo 32: Example of CLAY material observed during site investigation



Photo 33: Example of silty CLAY material observed during site investigation



Photo 34: Photograph of anthropogenic material observed at TP08



Photo 35: Photograph of SHALE material observed during site investigation



Photo 36: Photograph of asbestos fragment found at TP08-A



Photo 37: Photograph of asbestos fragment found at TP08



Photo 38: Looking south into the RFS from the Site's southern boundary



Photo 39: Looking west along the southern boundary of the Site, the shallow depression visible in the centre of the image would be used to potentially channel any stormwater run-off entering the Site from the RFS westward, however, the channel becomes increasingly shallow toward the tree (middle ground of photo) which would potentially lead to stormwater flowing northward into the school Site.

Appendix D

Calibration Certificates

Calibration and Service Report

ABN: 74 619 717 350

Contact: 02 9730 2019

Email: rentals@experttesting.com.au

9/171 Power Street, Glendenning NSW 2761

Web: www.experttesting.com.au

Company: Expert Testing Services (Hire) Pty Ltd
Address: 9/171 Power Street
GLENDENNING NSW 2761
Phone: 02 9730 2019
Email: rentals@experttesting.com.au

Manufacturer: AMS
Instrum./Model: Auger Kit 70 mm

Serial #: N/A
ETS Code: Auger 1

Client Company: SMEC
Client Name: Sam Vaughan

Client Email:
Client Phone:

AMS Soil Auger Kit – 70 mm

AUGER 2

Item	Test	Pass	Comments
Ratchet Handle	Working Operation	✓	New
Sand Auger	Condition	✓	New
Mud Auger	Condition	✓	New
Soil Auger	Condition	✓	New
Finger Ring	Condition	✓	New
3 SS Extensions	Condition	✓	3x 90cm extension & 1 x 65 cm ext.
T - handle	Condition	✓	New
Plastic Carry box	Condition	✓	New

Comments

New unit.

This is to certify that the above instrument has been checked and is in good working order.

Checked By: Milenko Sasic
Check Date: 12/04/2023

Due for Check: 12/10/2023

Calibration and Service Report

Company: ETS Rentals Department
Contact: Aachal Chand
Address: 9/171 Power Street,
GLENDEENING NSW 2761
Phone: 02 9730 2019
Fax:
Email: rentals@experttesting.com.au

Manufacturer: Honeywell
Instrument: MiniRAE 3000
Model: PGM7320
Configuration: VOC
Wireless: -
Network ID: -
Unit ID: -

Serial #: 592-918929
Asset #: -
Part #: -
Sold: -
Last Cal: 12.04.2023
Job #:
Cal Spec: Std
Order #: EFT

Item	Test	Pass/Fail	Comments	Part Code	S/W
Battery	NiCd, NiMH, Dry cell, Li Ion	✓			
Charger	Charger, Power supply	✓			
	Cradle	✓			
Pump	Flow	✓	>500ml/min		
Filter	Filter, fitting, etc	✓			
Alarms	Audible, visual, vibration	✓			
Display	Operation	✓			
Switches	Operation	✓			
PCB	Operation	✓			
Connectors	Condition	✓			
Firmware	Version	✓	Version: 2.22		
Datalogger	Operation	✓			
Monitor Housing	Condition	✓			
Case	Condition/Type	✓			
Sensors					
PID	Lamp	✓			
PID	Sensor	✓			
THP	Sensor	✓			

Engineer's Report

Checked unit settings and configuration – okay
Unit allowed to stabilize and zero calibration performed as per manufacturers specifications
Calibration procedure written and performed to manufacturers specification using traceable gases.

Calibration Certificate

Sensor	Type	Serial No:	Span Gas	Concentration	Traceability Lot #	CF	Reading	
							Zero	Span
PID	10.6eV	-	Isobutylene	100ppm	WO205484-9	1	0	100ppm

Calibrated/Repaired by:

Milenko Sasic

Date:

12.04.2023

Next Due:

12.10.2023



Appendix E

Logs

Explanatory Notes of Abbreviations and Terms

Used on Borehole and Excavation Logs

General

The “Geological and Engineering Log” presents data from drilling or excavation operations where material recovery is soil and or rock. Data presented is a combination of material recovered, regular sampling and in-situ testing. Excavations may present data obtained on the subsurface profile from observations of natural or man-made excavations. Logs may contain scaled graphical presentations, photography, or downhole imagery results. Logs may not contain all data types presented in these notes.

The “Non Core Drill Hole Engineering Log” presents data from drilling operations where a core barrel has not been used. The material is penetrated using methods other than those designed to recover core and is commonly soil or extremely to highly weathered. The “Cored Drill Hole Engineering Log” presents data from drilling operations where a core barrel has been used. The “Excavation - Geological Log” presents data obtained on the subsurface profile from observations of excavations, either natural or anthropogenic.

As far as is practicable, the data contained on the log sheet is factual. Some interpretation is inevitable with respect to the:

- a. assessment of material boundaries in areas of partial sampling and recovery,
- b. location of areas of core loss,
- c. description and classification of material,
- d. estimate of field strength, and
- e. identification of drilling induced fractures.

Material description and classification is generally based on AS1726-2017 (as amended).

Drilling Method

Code	Description
ADT	Auger drilling with TC-bit
ADV	Auger drilling V-bit
AS	Auger screwing
AT	Air track
CA	Casing advancer
CC	Concrete core
CTR	Cable tool rig
DB	Wash bore drag bit
HA	Hand auger
HAND	Hand methods
HF	Hollow flight auger
HMLC	Diamond core 63.5 mm diameter
HQ / HRQ	Wire line core barrel 63.5 mm diameter
HQ3	Wire line core barrel 61.1 mm diameter
NDD	Non destructive drilling
NMLC	Diamond core 51.9 mm diameter
NQ	Wire line core barrel 47.6 mm diameter
NQ3	Wire line core barrel 45.1 mm diameter
PT	Continuous push tube
PQ	Wire line core barrel 85.0 mm diameter
RAB	Rotary air blast
RC	Reverse circulation
RD	Rotary blade or drag bit
RR	Rock roller
RT	Rotary tricone bit
SD	Sonic drilling
TBX	Tube-X
VC	Vibro-core drilling
WB	Wash bore drilling

Drilling Penetration

Ease of penetration in non-core drilling

Term	Description
VE	Very easy
E	Easy
F	Firm
H	Hard
VH	Very hard

Support and Casing

Code	Description	Code	Description
C	Casing	Hw	114.3 mm
M	Mud	Nw	88.9 mm
W	Water	PVC 150	150 mm

Core Run

Core lifts are identified by a line and depth with core loss per run as a percentage. Core loss is shown in the core run unless otherwise indicated.

Defect Spacing

The average distance between defects is measured parallel to the core axis in mm and may be expressed as a range or average.

Angle / Orientation

Angle from horizontal and orientation to magnetic north.

For inclined cored boreholes the Alpha and Beta angles are presented for orientated core. Alpha (α) is measured relative to the core axis, whilst Beta (β) is measured clockwise from the reference line looking down the core axis in the direction of drilling.

Excavation Method

Term	Definition
N	Natural exposure
X	Existing excavation
BB	Tractor mounted backhoe bucket
EX	Hydraulic excavator
EH	Hydraulic excavator with hammer
B	Bulldozer blade
R	Ripper

Water / Drilling Fluid

The drilling fluid used is identified and loss of return to the surface is estimated as a percentage, generally of each core lift.

Symbol	Description
	Water inflow
	Water outflow
	Water level: during drilling or immediately after completion of drilling
	Groundwater level with date observed prior to introduction of fluids or after standpipe construction
Not observed	The observation of groundwater, whether present or not, was not possible due to drilling water, surface seepage or cave in of the borehole / test pit.
Not encountered	The borehole / test pit was dry soon after excavation, however groundwater could be present in less permeable strata. Inflow may have been observed had the borehole / test pit been left open for a longer period.

Colour

The colour of a soil or rock is described in a moist/wet condition using simple terms, such as black, white, grey, red, brown, orange, yellow green or blue. These are modified as necessary by 'pale', 'dark' or 'mottled'. Borderline colours are described as a combination of these colours (e.g. orange-brown). Where a soil or rock consists of a primary colour with a secondary mottling it is described as (primary colour) mottled (first colour) and (secondary colour). Where colour is described outside of the material description it is for the interval.

Black						
White						
			Grey			
			Brown			
			Red			
			Orange			
			Yellow			
			Green			
			Blue			
< Darker			Paler >			

Description of Soil

- vi. Soil name (BLOCK LETTERS)
- vii. Plasticity or particle size of soil
- viii. Colour (i.e. dominant colour of material)
- ix. Secondary soil components names & estimated proportions, including their plasticity / particle characteristics, colour
- x. Minor soil components name, estimated proportions, including their plasticity / particle characteristics, colour
- xi. Other minor soil components
- xii. Moisture condition
- xiii. Consistency / density
- xiv. Structure of soil, geological origin
- xv. Additional observations

Particle Size

Term		Grain Size
Clay		< 2 μ m
Silt		2 – 75 μ m
Sand	Fine	0.075 – 0.21 mm
	Medium	0.21 – 0.6 mm
	Coarse	0.6 – 2.36 mm
Gravel	Fine	2.36 – 6.7 mm
	Medium	6.7 – 19 mm
	Coarse	19 – 63 mm
Cobbles		63 – 200 mm
Boulders		> 200 mm

Fine Grained and Coarse Grained Soils

Term	Description
Fine Grained Soil (cohesive)	More than 35% of the material less than 63 mm is smaller than 0.075 mm (silts and clays)
Coarse Grained Soil	More than 65% of the material less than 63 mm is larger than 0.075 mm (sands, gravels and cobbles)

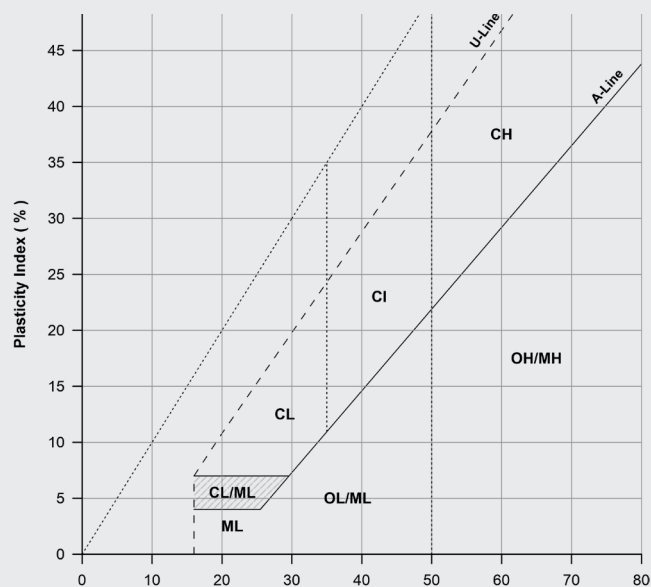
Descriptive Terms for Secondary and Minor Components

Designation of Components	In coarse grained soils				In fine grained soils	
	% Fines	Terminology	% Accessory coarse fraction	Terminology	% Sand / Gravel	Terminology
Minor	≤ 5	trace	≤ 15	trace	≤ 15	trace
	> 5, ≤ 12	with	> 15, ≤ 30	with	> 15, ≤ 30	with
Secondary	> 12	prefix	> 30	prefix	> 30	prefix

Plasticity – Fine Grained Soils

Liquid Limit (LL) %	Description
≤ 35	Low plasticity (L)
> 35 to ≤ 50	Medium plasticity (I)
> 50	High plasticity (H)

Plasticity Chart– Fine Grained Soils



Consistency Terms – Fine Grained Soils

Term	Undrained shear strength (kPa)	Indicative SPT (N) Blow Count	Field Guide to Consistency
Very Soft (VS)	< 12	0 – 2	Easily penetrated several centimetres by fist, exudes between fingers when squeezed in fist
Soft (S)	12 – 25	2 – 4	Easily penetrated several centimetres by thumb, easily moulded by light finger pressure
Firm (F)	25 – 50	4 – 8	Can be penetrated several centimetres by thumb with moderate effort, and moulded between the fingers by strong pressure
Stiff (St)	50 – 100	8 – 15	Readily indented by thumb but penetrated only with difficulty. Cannot be moulded by fingers
Very Stiff (VSt)	100 – 200	15 – 30	Readily indented by thumb nail, still very tough
Hard (H)	> 200	> 30	Indented with difficulty by thumb nail, brittle
Friable (Fr)	-		Can be easily crumbled or broken into small pieces

Density Terms – Coarse Grained Soils

Term	Density Index (%)	SPT (N) Blow Count
Very Loose (VL)	< 15	0 – 4
Loose (L)	15 – 35	4 – 10
Medium Dense (MD)	35 – 65	10 – 30
Dense (D)	65 – 85	30 – 50
Very Dense (VD)	> 85	> 50

Particle Characteristics – Coarse Grained Soils

Term	Description
Well graded	Having good representation of all particle sizes
Poorly graded	With one or more intermediate size poorly represented
Gap graded	With one or more intermediate sizes absent
Uniform	Essentially of one size

Angularity – Coarse Grained Soils

	Rounded
	Sub-rounded
	Angular
	Sub-angular

Origin of Soil

Fill	Formed by anthropogenic activity
Aeolian	Formed by wind
Alluvial	Formed by streams and rivers
Colluvial	Formed on slopes (talus)
Estuarine	Formed in marine environments
Lacustrine	Formed in lakes
Residual	Formed by weathering insitu

Soil Moisture

	Term	Code	Description
Coarse Grained	Dry	D	Looks and feels dry and free running
	Moist	M	Soil feels cool, darkened in colour, soils tend to stick together, soil grains do not run freely through fingers and no visible free water
	Wet	W	Soil feels cool, darkened in colour, soils tend to stick together, free water on remoulding
Fine Grained	Moist, Less than Plastic Limit	W < PL	Hard and friable or powdery, moisture content well below Plastic Limit
	Moist, Near Plastic Limit	W ≈ PL	Soil feels cool, darkened in colour, can be moulded, near Plastic Limit
	Moist, Wet of Plastic Limit	W > PL	Soil feels cool, dark, usually weakened, free water, moisture content well above Plastic Limit
	Wet, Near Liquid Limit	W ≈ LL	Soil exudes easily
	Wet, Wet of Liquid Limit	W > LL	Soil behaves as a liquid

Boundary Classifications

Soils possessing characteristics of two groups are designated by combinations of group symbols. For example, GW-GC, well graded gravel-sand mixture with clay binder.

Graphic Symbols

	Asphalt		MH
	CH		ML
	CI		OH
	CL		OL
	Concrete		PT
	Fill		SC
	GC		SM
	GM		SP
	GP		SW
	GW		Topsoil

Soil Classification

Soils are described in general accordance with AS1726-2017 as shown below.

FIELD IDENTIFICATION PROCEDURES (Excluding particles larger than 63 mm and basing fractions on estimated mass)					GROUP SYMBOL	PRIMARY NAME	
COARSE GRAINED SOILS More than 65% of the material is less than 63 mm and is larger than 0.075 mm	A particle size of 0.075 is about the smallest size distinguishable to the naked eye	GRAVELS More than half of coarse fraction is larger than 2.36 mm	CLEAN GRAVELS (Little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes, not enough fines to bind coarse grains, no dry strength; ≤ 5% fines	GW	GRAVEL	
				Predominantly one size or a range of sizes with more intermediate sizes missing, not enough fines to bind coarse grains, no dry strength; ≤ 5% fines	GP	GRAVEL	
			GRAVELS w/ FINES (Appreciable amount of fines)	'Dirty' materials with excess of non-plastic fines, none to medium dry strength; ≥ 12% silty fines	GM	SILTY GRAVEL	
				'Dirty' materials with excess of plastic fines, medium to high dry strength; ≥ 12% clayey fines	GC	CLAYEY GRAVEL	
		SANDS More than half of coarse fraction is smaller than 2.36 mm	CLEAN SANDS (Little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes, not enough fines to bind coarse grains, no dry strength; ≤ 5% fines	SW	SAND	
				Predominantly one size or a range of sizes with more intermediate sizes missing, not enough fines to bind coarse grains, no dry strength; ≤ 5% fines	SP	SAND	
			SANDS w/ FINES (Appreciable amount of fines)	'Dirty' materials with excess of non-plastic fines, none to medium dry strength; ≥ 12% silty fines	SM	SILTY SAND	
				'Dirty' materials with excess of plastic fines, medium to high dry strength; ≥ 12% clayey fines	SC	CLAYEY SAND	
FINE GRAINED SOILS More than 35% of the material less than 63 mm is less than 0.075 mm	A particle size of 0.075 is about the smallest size distinguishable to the naked eye	IDENTIFICATION PROCEDURES ON FRACTIONS < 0.075 mm					
		SILTS AND CLAYS Liquid Limit < 50%	DRY STRENGTH	DILATANCY	TOUGHNESS	GROUP SYMBOL	PRIMARY NAME
			None to low	Slow to rapid	Low	ML	SILT
			Medium to high	≥ 12% clayey fines	Medium	CL, CI*	CLAY
		SILTS AND CLAYS Liquid Limit > 50%	Low to medium	Slow	Low	OL	ORGANIC SILT
			Low to medium	None to slow	Low to medium	MH	SILT
			High to very high	None	High	CH	CLAY
			Medium to high	None to very slow	Low to medium	OH	ORGANIC CLAY
HIGHLY ORGANIC SOILS: readily identified by colour, odour, spongy feel and frequently fibrous texture					PT	PEAT	

* CL is low plasticity clay, CI is medium plasticity clay

Description of Rock

- i. Rock name (BLOCK LETTERS)
- ii. Grain size and mineralogy
- iii. Colour (i.e. dominant colour of material)
- iv. Fabric and texture
- v. Features, inclusions, minor components, moisture content and durability
- vi. Strength
- vii. Weathering and/or alteration
- viii. Rock mass properties – discontinuities and structure of rock
- ix. Interpreted stratigraphic unit
- x. Additional observations including geological structure

Simple rock names are used to provide a reasonable engineering description, rather than a precise geological classification. The rock name is chosen by considering the nature and shape of the grains or crystals, the texture and fabric of the rock material, the geological structure and setting, and information from the geological map of the area. Further guidance on the naming of rocks can be found in AS1726-2017, Tables 15, 16, 17 and 18. Typical rock types are described below, though subject to site specific variations.

Rock Type	Description	Example of Rock Name
Sedimentary	Formed by deposited beds of sediments, have grains that are cemented together and often rounded. Significant porosity	COMMON: Conglomerate, Breccia, Sandstone, Mudstone, Siltstone, Claystone ≥90% CARBONATE: Limestone, Dolomite, Calcirudite, Calcarenite, Calcisiltite, Calcilutite PYROCLASTIC: Agglomerate, Volcanic Breccia, Tuff
Igneous	Formed from molten rock and have a crystalline texture. Typically massive and low porosity. Rock types are from coarse to fine grained.	HIGH QUARTZ CONTENT: Granite, Microgranite, Rhyolite MODERATE QUARTZ CONTENT: Diorite, Microdiorite, Andesite LOW QUARTZ CONTENT: Gabbro, Dolerite, Basalt
Metamorphic	Formed when rocks are subject to heat and/or pressure and have typically have directional fabric. Typically have low porosity and crystalline structure. Rock types are from coarse to fine grained	FOLIATED: Gneiss, Schist, Phyllite, Slate NON-FOLIATED: Marble, Quartzite, Serpentinite, Hornfels
Duricrust	Formed as part of a weathering profile and show evidence of being cemented in situ. Cementation is typically irregular and exhibits replacement textures.	Ferricrete (Iron oxides and hydroxides) Silicrete (Silica) Calcrete (Calcium carbonate) Gypcrete (Gypsum)

Note: () denotes dominant cementing mineralogy

Grain Size

Terms describing dominate grain size in sedimentary rocks.

Term	Grain size
Coarse	Mainly 0.6 mm to 2.0 mm
Medium	Mainly 0.2 mm to 0.6 mm
Fine	Mainly 0.06 mm (just visible) to 0.2 mm

Terms describing dominate grain size in igneous and metamorphic rocks

Term	Grain size
Coarse	Mainly greater than 2 mm
Medium	0.06 mm to 2 mm
Fine	Mainly less than 0.06 mm (just visible) to 0.2 mm

Texture and Fabric

Sedimentary rocks

Thickness	Bedding Term
< 6 mm	Thinly laminated
6 – 20 mm	Laminated
20 – 60 mm	Very thinly bedded
60 – 200 mm	Thinly bedded
0.2 – 0.6 m	Medium bedding
0.6 – 2 m	Thickly bedded
> 2 m	Very thickly bedded

Igneous rocks

Term	Definition
Amorphous	Indicates that the rock has no obvious crystalline structure
Crystalline	A regular molecular structure, showing crystal structure and symmetry.
Cryptocrystalline	The texture comprises crystals that are too small to recognise under an ordinary microscope. Indistinctly crystalline.
Porphyritic	Indicates the presence of phenocrysts (relatively large crystals in a fine grained ground mass) in igneous rocks.
Flow banded	Indicates visible flow lines in volcanic rocks and some intrusive rocks
Glassy	Entirely glass like. No crystalline units and without crystalline structure.
Vesicular	A texture of volcanic rocks that indicates the presence of vesicles (small gas bubbles). Where the vesicles are filled with a mineral substance they are termed Amygdales and the texture is Amygdaloidal.

Metamorphic

Term	Definition
Foliation	The parallel arrangement of minerals due to metamorphic process, which shall be defined by the terms in weak, moderate and strongly foliated.
Porphyroblastic	A texture indicating the presence of porphyroblasts (larger crystals formed by recrystallization during metamorphism, such as garnet or staurolite in a mica schist).
Cleavage	A type of foliation developed in fine grained metamorphic rocks such as slates.

Bedding and Fabric Development

Type	Definition
Massive	No obvious development of bedding – rock appears homogeneous
Poorly Developed	Bedding is barely obvious as faint mineralogical layering or grain size banding, but bedding planes are poorly defined.
Well Developed	Bedding is apparent in outcrops or drill core as distinct layers or lines marked by mineralogical or grain size layering.
Very Well Developed	Bedding is often marked by a distinct colour banding as well as by mineralogical or grain size layering.
Indistinct Fabric	There is little effect on strength properties
Distinct Fabric	The rock may break more easily parallel to the fabric

Rock Strength

Term (Code)	UCS (MPa)	Is ₍₅₀₎ (MPa)	Field Guide to Strength
Very Low (VL)	0.6 - 2	> 0.03 to ≤ 0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 3 cm thick can be broken by finger pressure.
Low (L)	2 - 6	> 0.1 to ≤ 0.3	Easily scored with a knife; indentations 1 mm to 3 mm show in the specimen with firm blow of the pick point; has dull sound under hammer. A piece of core 150 mm long 50 mm in diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
Medium (M)	6 - 20	> 0.3 to ≤ 1.0	Readily scored with a knife; a piece of core 150 mm long by 50 mm in diameter can be broken by hand with difficulty.
High (H)	20 - 60	> 1 to ≤ 3	A piece of core 150 mm long by 50 mm in diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very High (VH)	60 - 200	> 3 to ≤ 10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
Extremely High (EH)	> 200	> 10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

Rock strength is assessed by laboratory Uniaxial Compressive Strength (UCS) testing and/or Point Load Strength Index (PLT) testing to obtain the Is₍₅₀₎ the strength table implies a 20 times correlation between Is₍₅₀₎ and UCS used for classification. Note however, multiplier may range from 4 (e.g. some carbonated and low strength rocks) to 40 (e.g. some igneous rocks and/or some high strength rocks). A site specific correlation based on testing, previous investigation or literature may be used where available. These terms refer to the strength of the rock material and not to the strength of the rock mass which may be considered weaker due to the effect of rock defects.

Visual Log

A diagrammatic plot of defects showing type, spacing and orientation in relation to the core axis.

————	Defects open in situ or clay sealed
-----	Defects closed in-situ
.....	Drill induced fractures or handling breaks
■	Infilled seam

Rock Weathering and or Alteration Classification

Term (Code)		Definition	
Residual soil (RS)		Soil developed on extremely weathered rock. The rock mass structure and substance fabric are no longer evident but the soil has not been significantly transported.	
Extremely weathered (XW) Extremely altered (XA)		Rock is weathered to such an extent that it has 'soil' properties, i.e, it either disintegrates or can be remoulded in water, but the texture of original rock is still evident.	
Highly weathered (HW) Highly Altered (HA)	Distinctly weathered (DW)* Distinctly Altered (DA)	Whole rock material is discoloured usually by extent that iron staining or bleaching and other signs of chemical or physical decomposition are evident. Porosity and strength may be increased or decreased compared to the fresh rock usually as a result of iron leaching or deposition. The colour and strength of the original rock substance is no longer recognisable	*Where is it not practical to distinguish between 'HW' and MW'. Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores
Moderately weathered (MW) Moderately Altered (MA)		Whole rock material is discoloured usually by staining that original colour of the fresh rock is no longer recognisable	
Slightly weathered (SW) Slightly altered (SA)		Rock is slightly discoloured but shows little or no change of strength from fresh rock	
Fresh rock (FR)		Rock shows no sign of decomposition or staining.	

Rock Core Recovery

TCR = Total Core Recovery (%)

$$\frac{\text{Length of Core Recovered}}{\text{Length of Core run}} \times 100$$

SCR = Solid Core Recovery (%)

$$\frac{\text{Sum Length of Cylindrical Core Recovered}}{\text{Length of Core run}} \times 100$$

RQD = Rock Quality Designation (%)

$$\frac{\text{Sum Length of Sound Core Pieces > 100mm in length}}{\text{Length of Core run}} \times 100$$

Types of Defects

Term		Code	Description
Parting		PT	A surface or crack across which the rock has little or no tensile strength. Parallel or sub-parallel to layering (e.g. bedding) or a planar anisotropy in the rock material (i.e. cleavage). May be opened or closed.
Joint		JT	A surface or crack with no apparent shear displacement and across which the rock has little or no tensile strength, but which is not parallel or sub-parallel to layering or to planar anisotropy in the rock material. May be open or closed.
Sheared Surface		SR	A near planar, curved or undulating surface which is usually smooth, polished or slickensided and which shows evidence of shear displacement.
Sheared Zone		SZ	Zone of rock material with roughly parallel, near planar, curved, or undulating boundaries cut by closely spaced joints, sheared surfaces or other defects. Some of the defects are usually curved and intersect to divide the mass into lenticular or wedge-shaped blocks.
Crushed Zone ^a		CZ	A zone of broken and disturbed ground containing more than one identifiable Crushed Seam.
Fracture Zone ^a		FZ	A zone of broken ground with parallel to opposing boundaries dominated by abundant, extremely closely to closely spaced defects, which may be intact or open, and planar, curved, undulating, irregular, or stepped, resulting in a dissected rock mass of angular trapezoidal, triangular or rectangular fragments.
Seam (SE)	Sheared Seam	SS	Seam of soil material with roughly parallel almost planar boundaries, composed of soil materials with roughly parallel near planar, curved or undulating boundaries cut by closely spaced joints, sheared surfaces or other defects. Some of the defects are usually curved and intersect to divide the mass into lenticular or wedge-shaped blocks.
	Crushed Seam	CS	Seam of soil material with roughly parallel almost planar boundaries, composed of disoriented, usually angular fragments of the host rock material which may be more weathered than the host rock. The seam has soil properties.
	Infilled Seam	IS	Seam of soil material usually with distinct roughly parallel boundaries formed by the migration of soil into an open cavity or joint, infilled seams less than 1 mm thick may be described as a veneer or coating on a joint surface.
	Extremely Weathered Seam	XS	Seam of soil material, often with gradational boundaries. Formed by weathering of the rock material in place.
Fault ^b		FT	A fracture (defect) or fracture zone along which there has been an observable amount of displacement.
Vein ^c		VE	Any fracture that contains mineralized material. Veins can display either crack-normal extension or shear displacement coupled with crack-normal extension.
Vugh ^a		VG	An open void with secondary crystallisation which may be coated, partly or nearly completely filled.
Void ^a		VO	An open space created through natural or anthropogenic processes, including, but not limited to, caves, kettles, tunnels, mines, pipes, piping, landslides, faulting, shearing, dissolution, & erosion.
Mechanical Break		MB	A fracture or break induced or created by the sampling process (i.e. drilling (DB) handling (HB), drill lift (DL), excavation, or blasting).

All definitions as per AS1726-2017, except:

^a SMEC Field Manual,

^b British Standard BS 5930:2015, and

^c Glossary of Geology (Fifth Edition - revised) (2011), American Geosciences Institute.

Defect Planarity

Code	Description
CR	Curved – A defect with a gradual change in orientation
IR	Irregular – A defect with many sharp changes in orientation
PL	Planar – Defect forms a continuous plane without variation in orientation
ST	Stepped – A defect with distinct sharp steps or step
UN	Undulose – A defect with undulations

Defect Roughness

Code	Description
RO	Rough – Many small surface irregularities generally related to the grain size of the parent rock
SM	Smooth – Few or no surface irregularities related to the grain size of the parent rock
PO	Polished – Planes have a distinct sheen or a smoothness
SL	Slickensided – Planes have a polished, grooved or striated surface consistent with differential movement of the parent rock along the plane
VR	Very rough – many large surface irregularities, amplitude generally more than 1mm

Type of Structures

Term	Code	Description
Bedding	BD	A layered arrangement of minerals parallel to the surface of deposition which has caused planar anisotropy in the rock substance.
Cleavage	CV	An alignment of fine grained minerals caused by deformation.
Schistosity	SH	A layered arrangement of minerals to each other
Foliation	FO	A planar alignment of minerals caused by deformation.
Void	VO	A completely empty space
Dyke	DK	Sheet-like bodies of igneous rock that cut across sedimentary bedding or foliations in rocks. They may be single or multiple in nature
Sill	SL	A sill is an intrusion of magma that spreads underground between the layers of another kind of rock
Contact	CX	A contact between intrusive and stratigraphic units.
Boundary	BN	A distinct boundary between two stratigraphic units
Vugh	VG	An open void with crystallisation

Note: Drill breaks (DB) and handling breaks (HB) are not included as natural discontinuity.

Discontinuity Spacing

Spacing (mm)	Description
> 6000	Extremely Widely Spaced
2000 - 6000	Very Widely Spaced
600 - 2000	Widely Spaced
200 - 600	Medium Spaced
60 - 200	Closely Spaced
20 - 60	Very Closely Spaced
< 20	Extremely Closely Spaced

Infill Material

Code	Name	Code	Name
Ap	Apatite	Ga	Galena
Ca	Calcite	Gp	Gypsum
Ch	Chlorite	Mn	Manganese
Cl	Clay	MnO	Manganese Oxide
Co	Coal	MS	Secondary mineral
Ep	Epidote	Py	Pyrite
Fe	Limonite/ Ironstone/ Goethite	Um	Unidentified mineral
FeO	Iron oxide	Qz	Quartz
Fs	Feldspar	X	Carbonaceous
		Ze	Zeolite

Discontinuity Observation

Term	Code	Description
Clean	CN	No visible coating or infill
Stain	SN	No visible coating or infill but surfaces are discoloured by mineral staining
Veneer < 1 mm	VN	A visible coating or soil or mineral substance but usually unable to be measured. If discontinuous over the plane, patchy veneer.
Coating > 1 mm to < 10 mm	CT	A visible coating or infilling of soil or mineral substance. Describe composition and thickness.
Filling (Filled) > 10 mm	FD	A visible filling of soil or mineral substance. Describe composition and thickness.

Discontinuity Orientation

Code	Description
VT	Vertical
HO	Horizontal
RL	Top right to bottom left
LR	Top left to bottom right

Samples and Field Tests

Code	Description
B	Bulk disturbed sample
BLK	Block sample
C	Core sample
CBR	CBR Mould Sample
CPT _u	Cone Penetration Test (with pore pressure)
DT	Dilatometer
DS	Small disturbed sample
ES	Soil sample for environmental testing
EW	Water sample for environmental testing
FP	Pressuremeter
G	Gas sample
H	Hydraulic fracturing
HP	Hand penetrometer test
I	Impression device
IS ₍₅₀₎	Point Load Index
K	Permeability
LB	Large bulk disturbed sample
N	Standard penetration test result (N* denotes SPT sample recovery)
O	Core orientation
P	Piston sample
PID	Photoionisation detector reading in ppm
PP	Penetrometer
R	Hammer bouncing / refusal
SPT	Standard Penetration Test
U	Undisturbed push in sample
UCS	Uniaxial Compressive Strength
U50	Undisturbed tube sample (50 mm diameter)
U75	Undisturbed tube sample (75 mm diameter)
U100	Undisturbed tube sample (100 mm diameter)
VS	Vane shear test
● (A)	Axial Test
○ (D)	Diametral Test
□	Irregular Lump test

Completion Details

Type	Description
Collapse	Exploratory hole collapsed before reaching planned depth
Equipment Failure	Boring or excavator equipment operational failure
Flooding	Flooding of excavation
Machine Limit	Limit of machine capability reached
Obstruction	Obstruction preventing further advancement
Operator Limit	Limit of operator limit/safety reached
Possible services	Indication of possible services below
Services present	Services encountered during exploratory hole
Squeezing	Hole squeezing boring equipment
Target Depth	Depth reached as planned
Target Depth (Instrumentation Installed)	Depth reached as planned instrumentation installed
Target Depth (Standpipe Installed)	Depth reached as planned open standpipe constructed
Material Refusal	Material preventing further advancement

Laboratory Tests

Code	Description
ACM	Asbestos Containing Material
CD	Consolidated Drained
CU	Consolidated Undrained
LL	Liquid Limit
LS	Linear Shrinkage
MC	Moisture Content
MDD	Maximum Dry Density
OMC	Optimum Moisture Content
PBT	Plate Bearing Test
PI	Plasticity Index
PL	Plastic Limit
PSD	Particle Size Distribution
ρ_b	Bulk Density
ρ_p	Particle Density
ρ_d	Dry Density
UU	Undrained Unconsolidated

Backfill / Standpipe Detail

Symbol	Description	Symbol	Description
	Cement seal		Filter pack: sand filter
	Grout backfill GP -Cement BE - Bentonite Cement		Filter pack: gravel filter
	Un-slotted pipe		Bentonite seal
	Slotted pipe		Cutting - excavated material backfill
	Surface Completion: Monument Above Ground		Surface Completion: Gatic Ground Monument

Status

Code	Description
-2	Historic
-1	For information
0	Preliminary
1	Checked
2	Draft
3	Final

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor SMEC

Excavation Method Hand Auger

Inclination -90°

Date Started 20/04/2023

Date Completed 20/04/2023

Logged HW

Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL SILT: low plasticity, brown.	D	S	FILL 0.00: PID = 3.8ppm
	VE		0.2	0.20	ES 0.30-0.40 m		FILL SAND: medium grained, pale brown.	D	S	0.30: PID = 4.5ppm
	H		0.4	0.40		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL	
			0.50	HA Terminated at 0.50 m Target Depth No dark staining or unusual odours observed						
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF

Date 05/06/2023



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TEST: HA02

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor SMEC

Excavation Method Hand Auger

Inclination -90°

Date Started 20/04/2023

Date Completed 20/04/2023

Logged HW

Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL SILT: low plasticity, brown.	D	S	FILL 0.00: PID = 3.3ppm
			0.10				FILL Silty CLAY: low plasticity, pale brown.			
	VE		0.2		ES 0.20-0.30 m			D	S	0.20: PID = 3ppm
			0.30		ES 0.30-0.40 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.30: PID = 4.6ppm
	H		0.4	0.40			HA Terminated at 0.40 m Target Depth No dark staining or unusual odours observed			

Comments

Checked MF

Date 05/06/2023



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TEST: HA03

Sheet 1 OF 1

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor SMEC
Excavation Method Hand Auger
Inclination -90°

Date Started 20/04/2023
Date Completed 20/04/2023
Logged HW

Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0				FILL SILT: low plasticity, brown.	D	S	FILL
			0.10	ES 0.10-0.20 m		FILL Silty CLAY: low plasticity, pale brown.			0.10: PID = 4.3ppm	
	VE		0.2					D	S	
			0.4	0.40	ES 0.40-0.50 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.40: PID = 4.7ppm
			0.50				HA Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

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Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0		ES 0.10-0.20 m		FILL Silty CLAY: low plasticity, pale brown.	D	S	FILL 0.10: PID = 8.2ppm
			0.2							
	H		0.4	0.40	ES 0.40-0.50 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.40: PID = 3.8ppm
			0.50				HA Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

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Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0		ES 0.20-0.30 m		FILL Silty CLAY: medium plasticity, dark brown.	M	S	FILL 0.20: PID = 4.2ppm
			0.2							
	H		0.4	0.40			CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL
			0.50				HA Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

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Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0				FILL SILT: low plasticity, brown.	D	S	FILL 0.20: PID = 4.8ppm
			0.2	ES 0.20-0.30 m						
	H			0.50	ES 0.50-0.60 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.50: PID = 7.9ppm
			0.60				HA Terminated at 0.60 m Target Depth No dark staining or unusual odours observed			
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

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Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: medium plasticity, dark brown.	M	S	FILL 0.00: PID = 4ppm
			0.10		ES 0.10-0.20 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.10: PID = 6.9ppm
	H			0.20				HA Terminated at 0.20 m Target Depth No dark staining or unusual odours observed		
			0.2							
			0.4							
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							
Comments										
Checked MF Date 05/06/2023										

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Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0				FILL Silty CLAY: low plasticity, pale brown.	D	S	FILL 0.10: PID = 5.8ppm
			0.2		ES 0.10-0.20 m					
	H		0.30		ES 0.30-0.40 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.30: PID = 3.4ppm
			0.40				HA Terminated at 0.40 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							
Comments										
								Checked	MF	
								Date	05/06/2023	

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor SMEC

Excavation Method Hand Auger

Inclination -90°

Date Started 20/04/2023

Date Completed 20/04/2023

Logged HW

Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0		ES 0.10-0.20 m		FILL Silty CLAY: low plasticity, pale brown.	D	S	FILL 0.10: PID = 8.2ppm
	H			0.30	ES 0.30-0.40 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.30: PID = 3.9ppm
			0.40				HA Terminated at 0.40 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF

Date 05/06/2023



Member of the Surbana Jurong Group

TEST: HA10

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor SMEC

Excavation Method Hand Auger

Inclination -90°

Date Started 20/04/2023

Date Completed 20/04/2023

Logged HW

Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL SILT: low plasticity, brown.	D	S	FILL 0.00: PID = 4.7ppm
			0.10				FILL Silty CLAY: low plasticity, grey, trace gravel.			
			0.2		ES 0.20-0.30 m			D		0.20: PID = 4.6ppm
			0.30				CLAY: high plasticity, pale red with grey mottle.			RESIDUAL SOIL
	H		0.4		ES 0.40-0.50 m			M	VSt	0.40: PID = 5.7ppm
			0.50				HA Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023



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TEST: HA11

Sheet 1 OF 1

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor SMEC
Excavation Method Hand Auger
Inclination -90°

Date Started 20/04/2023
Date Completed 20/04/2023
Logged HW

Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0				FILL Silty CLAY: low plasticity, pale brown.	D	S	FILL
			0.2	ES 0.10-0.20 m			0.10: PID = 6.3ppm			
	H		0.4	0.40	ES 0.40-0.50 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.40: PID = 7.6ppm
			0.50				HA Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							
Comments										
								Checked	MF	
								Date	05/06/2023	

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor SMEC

Excavation Method Hand Auger

Inclination -90°

Date Started 20/04/2023

Date Completed 20/04/2023

Logged HW

Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0		ES 0.10-0.20 m		FILL Silty CLAY: low plasticity, pale brown.	D	S	FILL 0.10: PID = 2.8ppm
	H		0.30				CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL
			0.40	0.40			HA Terminated at 0.40 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF

Date 05/06/2023



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TEST: HA13

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor SMEC

Excavation Method Hand Auger

Inclination -90°

Date Started 20/04/2023

Date Completed 20/04/2023

Logged HW

Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0				FILL Silty CLAY: low plasticity, pale brown.	D	S	FILL 0.10: PID = 3.4ppm
			0.2	ES 0.10-0.20 m						
	H		0.30	ES 0.30-0.40 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.30: PID = 4.2ppm	
			0.40				HA Terminated at 0.40 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							
Comments										
								Checked	MF	
								Date	05/06/2023	

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor SMEC
Excavation Method Hand Auger
Inclination -90°

Date Started 20/04/2023
Date Completed 20/04/2023
Logged HW

Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0		ES 0.10-0.20 m		FILL Silty CLAY: low plasticity, pale brown.	D	S	FILL 0.10: PID = 5ppm
	H		0.2	0.20			CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL
			0.30					HA Terminated at 0.30 m Target Depth No dark staining or unusual odours observed		
			0.4							
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked MF
Date 05/06/2023

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor SMEC
Excavation Method Hand Auger
Inclination -90°

Date Started 20/04/2023
Date Completed 20/04/2023
Logged HW

Drilling				Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
HA	VE	Not Encountered	0.0		ES 0.10-0.20 m		FILL Silty CLAY: low plasticity, pale brown.	D	S	FILL 0.10: PID = 4.2ppm
	H		0.30	ES 0.30-0.40 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.30: PID = 3.8ppm	
			0.40				HA Terminated at 0.40 m Target Depth No dark staining or unusual odours observed			

Comments

Checked MF
Date 05/06/2023



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TEST PIT: TP01

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

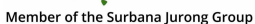
Date 18/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL SAND: medium grained, light brown.	D	L	FILL 0.00: PID = 0.3ppm
			0.10							
	VE		0.2		ES 0.20-0.30 m		FILL CLAY: high plasticity, light brown.	M	F	0.20: PID = 0.1ppm
			0.30							
	H		0.4		ES 0.40-0.50 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.40: PID = 0.5ppm
			0.50							
			0.6				TP Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023



TEST PIT: TP02

Sheet 1 OF 1

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 18/04/2023
Logged HW

Excavation					Sampling	Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL SILT: low plasticity, brown.	D	S	FILL 0.00: PID = 0.3ppm
	H		0.10		ES 0.20-0.30 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL
			0.2				0.20: PID = 0.8ppm			
			0.30				TP Terminated at 0.30 m Target Depth No dark staining or unusual odours observed			
			0.4							
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked	MF
Date	05/06/2023



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TEST PIT: TP03

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 18/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL SILT: low plasticity, brown.	D	S	FILL 0.00: PID = 0.5ppm
			0.10				CLAY: high plasticity, pale red with grey mottle.			RESIDUAL SOIL
	H		0.2		ES 0.30-0.40 m			M	VSt	0.30: PID = 0.9ppm
			0.4	0.40			TP Terminated at 0.40 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked MF
Date 05/06/2023



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TEST PIT: TP04

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 19/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL CLAY: high plasticity, light brown.	M	F	FILL 0.00: PID = 0.8ppm
			0.10				CLAY: high plasticity, pale red with grey mottle.			RESIDUAL SOIL
	H		0.2		ES 0.20-0.30 m			M	VSt	0.20: PID = 0.9ppm
			0.4	0.40			TP Terminated at 0.40 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked MF
Date 05/06/2023



Member of the Surbana Jurong Group

TEST PIT: TP05

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 19/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: low plasticity, light brown.	D	F	FILL 0.00: PID = 0.2ppm
	H		0.30							
			0.4		ES 0.40-0.50 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.40: PID = 0.3ppm
			0.50				TP Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 19/04/2023
Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL SILT: low plasticity, brown.	D	S	FILL 0.00: PID = 0.7ppm
			0.2	0.20	ES 0.20-0.30 m			CLAY: high plasticity, pale red with grey mottle.	M	VSt
	H			0.4	0.40			TP Terminated at 0.40 m Target Depth No dark staining or unusual odours observed		
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked MF
Date 05/06/2023

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 18/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL SILT: low plasticity, brown.	D	S	FILL 0.00: PID = 0.1ppm
	VE		0.2	0.20	ES 0.30-0.40 m		FILL SILT: low plasticity, grey.	D	S	0.30: PID = 0.6ppm
	H		0.50		ES 0.60-0.70 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.60: PID = 0.5ppm
			0.70				TP Terminated at 0.70 m Target Depth No dark staining or unusual odours observed			
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked MF
Date 05/06/2023



Member of the Surbana Jurong Group

TEST PIT: TP08

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 18/04/2023

Logged HW

Excavation			Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: low plasticity, brown.	D	F	FILL 0.00: PID = 0.4ppm
			0.2							
	VE		0.30				FILL SILT: low plasticity, grey.	D	F	
	VE		0.40	ES 0.40-0.50 m	FILL Silty CLAY: low plasticity, light brown, building materials.				0.40: PID = 0.4ppm	
					ES 0.50-0.60 m			D	F	0.50-0.60: tiles, metal pipe, ACM fragment; 0.50: PID = 0.1ppm
			0.60				TP Terminated at 0.60 m Target Depth No dark staining or unusual odours observed			
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked MF
Date 05/06/2023

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 19/04/2023
Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL MULCH: low plasticity, dark brown.	M	S	FILL
			0.10				FILL SAND: fine grained, light brown/ dark brown.			
	VE		0.2					M	L	
			0.4		ES 0.50-0.60 m					
			0.6							
			0.8	0.80	ES 0.80-0.90 m		FILL SAND: fine grained, light brown/ dark brown, foreign materials.			
	VE		0.80					M	L	
			1.0							
			1.10							
			1.2				TP Terminated at 1.10 m Target Depth No dark staining or unusual odours observed			
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 19/04/2023
Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	m	Not Encountered	0.0		ES 0.10-0.20 m		FILL CLAY: low plasticity, brown.	D	F	FILL
			0.2							
	H		0.30		ES 0.40-0.50 m		CLAY: medium plasticity, pale red with brown mottle.	D	VSt	RESIDUAL SOIL
			0.50							Multiple suspected ACM fragment observed
			0.6				TP Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 19/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	E	Not Encountered	0.0				FILL CLAY: low plasticity, brown.			FILL
			0.2		ES 0.10-0.20 m			D	F	
			0.4	0.40	ES 0.40-0.50 m		FILL SAND: medium grained, grey.	D	MD	
	H		0.50	ES 0.50-0.60 m		CLAY: medium plasticity, pale red with brown mottle.	D	VSt	RESIDUAL SOIL	
			0.6	0.60			TP Terminated at 0.60 m Target Depth No dark staining or unusual odours observed			
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked

MF

Date

05/06/2023

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 19/04/2023
Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	m	Not Encountered	0.0		ES 0.10-0.20 m		FILL CLAY: low plasticity, brown.	D	F	FILL
	H		0.2							
			0.30		ES 0.30-0.40 m		CLAY: medium plasticity, pale red with brown mottle.	D	VSt	RESIDUAL SOIL
			0.50							ACM fragment observed
			0.6				TP Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 18/04/2023
Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL CLAY: high plasticity, light brown.	M	F	FILL 0.00: PID = 0.1ppm
	H		0.50	ES 0.50-0.60 m			CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.50: PID = 0ppm
			0.60	0.60			TP Terminated at 0.60 m Target Depth No dark staining or unusual odours observed			
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked MF
Date 05/06/2023

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 19/04/2023
Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: low plasticity, light brown.	D	F	FILL 0.00: PID = 0.5ppm
	H		0.2							
			0.4	0.40	ES 0.40-0.50 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.40: PID = 0.5ppm
			0.6	0.60			TP Terminated at 0.60 m Target Depth No dark staining or unusual odours observed			
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked MF
Date 05/06/2023



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TEST PIT: TP11

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 19/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: medium plasticity, dark brown.	M	S	FILL 0.00: PID = 0.6ppm
			0.10		ES 0.10-0.20 m		FILL SAND: medium grained, pale brown/ yellow, trace gravel.			0.10: PID = 0.5ppm
	VE		0.2				D	L		
	H		0.4		ES 0.30-0.40 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.30: PID = 0.5ppm
	0.50									
			0.6				TP Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023



Member of the Surbana Jurong Group

TEST PIT: TP12

Sheet 1 OF 1

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 19/04/2023
Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: low plasticity, light brown.	D	S	FILL 0.00: PID = 0.5ppm
	H		0.2	0.20	ES 0.30-0.40 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.30: PID = 0.4ppm
			0.50				TP Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023



Member of the Surbana Jurong Group

TEST PIT: TP13

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 18/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: medium plasticity, dark brown.	M	S	FILL 0.00: PID = 0.5ppm
			0.10				FILL CLAY: high plasticity, light brown.			
	VE		0.2		ES 0.20-0.30 m			M	F	0.20: PID = 0.5ppm
			0.30		ES 0.30-0.40 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.30: PID = 0.7ppm
	H		0.4	0.40			TP Terminated at 0.40 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked MF
Date 05/06/2023



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TEST PIT: TP14

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 18/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	m	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: low plasticity, light brown.	D	S	FILL 0.00: PID = 0.2ppm
	±		0.2	0.20	ES 0.30-0.40 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.30: PID = 0.6ppm
			0.4	0.40			TP Terminated at 0.40 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023



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TEST PIT: TP15

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 18/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	H	Not Encountered	0.0		ES 0.00-0.10 m		FILL CLAY: medium plasticity, brown with yellow.	M	VSt	FILL 0.00: PID = 0.6ppm
	E		0.2	0.20	ES 0.30-0.40 m		FILL CLAY: low plasticity, pale brown, trace gravel.	D	VSt	
	H		0.4	0.40	ES 0.40-0.50 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.40: PID = 0.3ppm
			0.50				TP Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023



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TEST PIT: TP16

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 18/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: medium plasticity, dark brown.	M	S	FILL 0.00: PID = 0.4ppm
			0.10							
	E		0.2		ES 0.20-0.30 m		FILL CLAY: low plasticity, pale brown, trace gravel.	D	VSt	0.20: PID = 0.2ppm
			0.30							
	H		0.4		ES 0.40-0.50 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.40: PID = 0.6ppm
			0.50				TP Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 18/04/2023
Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: medium plasticity, dark brown.	M	S	FILL 0.00: PID = 0.4ppm
			0.2	0.20	ES 0.20-0.30 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.20: PID = 0.2ppm
	H			0.4	0.40		TP Terminated at 0.40 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked MF
Date 05/06/2023

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 18/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: low plasticity, pale brown.	D	S	FILL 0.00: PID = 0ppm
	H		0.2	0.20	ES 0.20-0.30 m			CLAY: high plasticity, pale red with grey mottle.	M	VSt
			0.30					TP Terminated at 0.30 m Target Depth No dark staining or unusual odours observed		
			0.4							
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked MF
Date 05/06/2023

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 18/04/2023
Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: medium plasticity, dark brown.	M	S	FILL 0.00: PID = 0ppm
	VE		0.2	0.20	ES 0.30-0.40 m		FILL CLAY: high plasticity, light brown.	M	F	
	H		0.4	0.40	ES 0.50-0.60 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.50: PID = 0ppm
			0.6	0.60			TP Terminated at 0.60 m Target Depth No dark staining or unusual odours observed			
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked MF
Date 05/06/2023

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 18/04/2023
Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL SILT: low plasticity, brown.	D	S	FILL 0.00: PID = 0ppm
			0.2							
	H		0.30		ES 0.30-0.40 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.30: PID = 0.1ppm
			0.40				TP Terminated at 0.40 m Target Depth No dark staining or unusual odours observed			
			0.4							
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

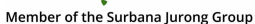
Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 18/04/2023
Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL SILT: low plasticity, brown.	D	S	FILL 0.00: PID = 0ppm
	E		0.2	0.20	ES 0.20-0.30 m		FILL CLAY: low plasticity, pale brown, trace gravel.	D	VSt	0.20: PID = 0.2ppm
	H		0.5	0.50	ES 0.50-0.60 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.50: PID = 0.5ppm
			0.6	0.60			TP Terminated at 0.60 m Target Depth No dark staining or unusual odours observed			
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023



TEST PIT: TP22

Sheet 1 OF 1

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 18/04/2023
Logged HW

Excavation				Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations	
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL SILT: low plasticity, brown.	D	S	FILL 0.00: PID = 0ppm	
			0.10								
	H		0.2		ES 0.20-0.30 m		SILT (SHALE): non plastic, grey with yellow.	D	VSt	RESIDUAL SOIL 0.20: PID = 0.2ppm	
			0.30								
	H		0.4		ES 0.50-0.60 m		CLAY: high plasticity, grey with yellow mottle.	M	VSt	0.50: PID = 0.4ppm	
			0.6	0.60			TP Terminated at 0.60 m Target Depth No dark staining or unusual odours observed				
			0.8								
			1.0								
			1.2								
			1.4								
			1.6								
			1.8								
			2.0								

Comments

Checked	MF
Date	05/06/2023

MEC 2.10.17 UB.GLB Log SMEC IS AU BOREHOLE 3 MODIFIED SMEC ENV NSW 30018043 AUSTRALGPJ <<DrawingFile>> 06/06/2023 12:57 10.03.00.09 DatatelTools | Lib: SMEC 2.10.9 2021-08-30 Proj: SMEC 2.10.9 2021-08-30



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TEST PIT: TP23

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 18/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: low plasticity, pale brown.	D	S	FILL 0.00: PID = 0.3ppm
	H		0.2	0.20	ES 0.30-0.40 m		SILT (SHALE): non plastic, grey with yellow.	D	VSt	RESIDUAL SOIL 0.30: PID = 0.2ppm
			0.4	0.40			TP Terminated at 0.40 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							
Comments										
								Checked	MF	
								Date	05/06/2023	

Project SINSW Projects
Location Austral Public School
Job No. 30018043
Client SINSW

Contractor Ken Coles Excavations Pty Ltd
Excavation Method CAT 302-7D 3 tonne excavator
Dimensions 0.60 m x 0.45 m

Date 19/04/2023
Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: medium plasticity, dark brown.	M	S	FILL 0.00: PID = 1.2ppm
	H		0.2	0.20	ES 0.30-0.40 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.30: PID = 1.3ppm
			0.50				TP Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							
			2.0							

Comments

Checked MF
Date 05/06/2023



Member of the Surbana Jurong Group

TEST PIT: TP25

Sheet 1 OF 1

Project SINSW Projects

Location Austral Public School

Job No. 30018043

Client SINSW

Contractor Ken Coles Excavations Pty Ltd

Excavation Method CAT 302-7D 3 tonne excavator

Dimensions 0.60 m x 0.45 m

Date 19/04/2023

Logged HW

Excavation				Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE & SPT	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE, FIELD TEST & Other Observations
EX	VE	Not Encountered	0.0		ES 0.00-0.10 m		FILL Silty CLAY: low plasticity, pale brown.	D	F	FILL 0.00: PID = 0.3ppm
	H		0.2	0.20	ES 0.30-0.40 m		CLAY: high plasticity, pale red with grey mottle.	M	VSt	RESIDUAL SOIL 0.30: PID = 0.8ppm
			0.4							
			0.50				TP Terminated at 0.50 m Target Depth No dark staining or unusual odours observed			
			0.6							
			0.8							
			1.0							
			1.2							
			1.4							
			1.6							
			1.8							

Comments

Checked MF
Date 05/06/2023

Appendix F

Field Monitoring Results



SMEC Australia Pty Ltd
20 Berry St, North Sydney NSW 2060
Phone: (02) 9925 5555 Fax: (02) 9925 5566

PHOTOIONISATION DETECTOR

Project: SINSW Detailed Site Investigations
Location: Austral Public School
Feature: -

Project No: 30018043
Date: 18/04/2023-20/04/2023
Tested By: HW

Equipment: Photoionisation Detector
Equip. ID: PID S/N: 592-918929 **Calibrated on:** Refer to Appendix F

Is calibration certificate attached?: Yes - refer to Appendix F

Calibration reading following field calibration: Refer to Appendix F

Method: Place portion of sample in separate ziplock bag and allowing to sit for 15 minutes. Pierce and record maximum PID result (ppmv) on fieldnotes. Discard sample onsite.

Location ID	Depth (m)	PID Screen Date	PID result (ppmv)	
TP01-0.0-0.1	-	18/04/2023	0.3	
TP01-0.2-0.3	-	18/04/2023	0.1	
TP01-0.4-0.5	-	18/04/2023	0.5	
TP02-0.0-0.1	-	18/04/2023	0.3	
TP02-0.2-0.3	-	18/04/2023	0.8	
TP03-0.0-0.1	-	18/04/2023	0.5	
TP03-0.3-0.4	-	18/04/2023	0.9	
TP04-0.0-0.1	-	19/04/2023	0.8	
TP04-0.2-0.3	-	19/04/2023	0.9	
TP05-0.0-0.1	-	19/04/2023	0.2	
TP05-0.4-0.5	-	19/04/2023	0.3	
TP06-0.0-0.1	-	19/04/2023	0.7	
TP06-0.2-0.3	-	19/04/2023	0.3	
TP07-0.0-0.1	-	18/04/2023	0.1	
TP07-0.3-0.4	-	18/04/2023	0.6	
TP07-0.6-0.7	-	18/04/2023	0.5	
TP08-0.0-0.1	-	18/04/2023	0.4	
TP08-0.4-0.5	-	18/04/2023	0.4	
TP08-0.5-0.6	-	18/04/2023	0.1	
TP09-0.0-0.1	-	18/04/2023	0.1	
TP09-0.5-0.6	-	18/04/2023	0.0	
TP10-0.0-0.1	-	19/04/2023	0.5	
TP10-0.4-0.5	-	19/04/2023	0.5	
TP11-0.0-0.1	-	19/04/2023	0.6	
TP11-0.1-0.2	-	19/04/2023	0.5	
TP11-0.3-0.4	-	19/04/2023	0.5	
TP12-0.0-0.1	-	19/04/2023	0.5	
TP12-0.3-0.4	-	19/04/2023	0.4	
TP13-0.0-0.1	-	19/04/2023	0.5	
TP13-0.2-0.3	-	18/04/2023	0.5	
TP13-0.3-0.4	-	18/04/2023	0.7	
TP14-0.0-0.1	-	18/04/2023	0.2	
TP14-0.3-0.4	-	18/04/2023	0.6	
TP15-0.0-0.1	-	18/04/2023	0.6	
TP15-0.3-0.4	-	18/04/2023	0.3	
TP15-0.4-0.5	-	18/04/2023	0.3	
TP16-0.0-0.1	-	18/04/2023	0.4	
TP16-0.2-0.3	-	18/04/2023	0.2	
TP16-0.4-0.5	-	18/04/2023	0.6	
TP17-0.0-0.1	-	18/04/2023	0.4	
TP17-0.2-0.3	-	18/04/2023	0.2	
TP18-0.0-0.1	-	18/04/2023	0.0	
TP18-0.2-0.3	-	18/04/2023	0.5	
TP19-0.0-0.1	-	18/04/2023	0.0	
TP19-0.3-0.4	-	18/04/2023	0.0	
TP19-0.5-0.6	-	18/04/2023	0.0	
TP20-0.0-0.1	-	18/04/2023	0.0	



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PHOTOIONISATION DETECTOR

Project: SINSW Detailed Site Investigations
Location: Austral Public School
Feature: -

Project No: 30018043
Date: 18/04/2023-20/04/2023
Tested By: HW

Equipment: Photoionisation Detector
Equip. ID: PID S/N: 592-918929 **Calibrated on:** Refer to Appendix F

Is calibration certificate attached?: Yes - refer to Appendix F

Calibration reading following field calibration: Refer to Appendix F

Method: Place portion of sample in separate ziplock bag and allowing to sit for 15 minutes. Pierce and record maximum PID result (ppmv) on fieldnotes. Discard sample onsite.

Location ID	Depth (m)	PID Screen Date	PID result (ppmv)	
TP20-0.3-0.4	-	18/04/2023	0.1	
TP21-0.0-0.1	-	18/04/2023	0.0	
TP21-0.2-0.3	-	18/04/2023	0.2	
TP21-0.5-0.6	-	18/04/2023	0.5	
TP22-0.0-0.1	-	18/04/2023	0.0	
TP22-0.2-0.3	-	18/04/2023	0.2	
TP22-0.5-0.6	-	18/04/2023	0.4	
TP23-0.0-0.1	-	18/04/2023	0.3	
TP23-0.3-0.4	-	18/04/2023	0.2	
TP24-0.0-0.1	-	19/04/2023	1.2	
TP24-0.3-0.4	-	19/04/2023	1.3	
TP25-0.0-0.1	-	19/04/2023	0.3	
TP25-0.3-0.4	-	19/04/2023	0.8	
HA01-0.0-0.1	-	20/04/2023	3.8	
HA01-0.3-0.4	-	20/04/2023	4.5	
HA02-0.0-0.1	-	20/04/2023	3.3	
HA02-0.2-0.3	-	20/04/2023	3.0	
HA02-0.3-0.4	-	20/04/2023	4.6	
HA03-0.1-0.2	-	20/04/2023	4.3	
HA03-0.4-0.5	-	20/04/2023	4.7	
HA04-0.1-0.2	-	20/04/2023	8.2	
HA04-0.4-0.5	-	20/04/2023	3.8	
HA05-0.2-0.3	-	20/04/2023	4.2	
HA06-0.2-0.3	-	20/04/2023	4.8	
HA06-0.5-0.6	-	20/04/2023	7.9	
HA07-0.0-0.1	-	20/04/2023	4.0	
HA07-0.1-0.2	-	20/04/2023	6.9	
HA08-0.1-0.2	-	20/04/2023	5.8	
HA08-0.3-0.4	-	20/04/2023	3.4	
HA09-0.1-0.2	-	20/04/2023	8.2	
HA09-0.3-0.4	-	20/04/2023	3.9	
HA10-0.0-0.1	-	20/04/2023	4.7	
HA10-0.2-0.3	-	20/04/2023	4.6	
HA10-0.4-0.5	-	20/04/2023	5.7	
HA11-0.1-0.2	-	20/04/2023	6.3	
HA11-0.4-0.5	-	20/04/2023	7.6	
HA12-0.1-0.2	-	20/04/2023	2.8	
HA13-0.1-0.2	-	20/04/2023	3.4	
HA13-0.3-0.4	-	20/04/2023	4.2	
HA14-0.1-0.2	-	20/04/2023	5.0	
HA15-0.1-0.2	-	20/04/2023	4.2	
HA15-0.3-0.4	-	20/04/2023	3.8	

Abbreviations:
ppmv parts per million (volume)
PID Photoionisation detector

Appendix G

Analytical Summary Tables

Table G1 - Summary of Soil Laboratory Results

	Inorganics																	Metals										Perfluoroalkane Carboxylic Acids		
	Exchangeable Sodium Percent	Total Phosphorus as P (Organic Phosphate as P)	Exchangeable Calcium	Exchangeable Magnesium	Exchangeable Potassium	Exchangeable Sodium	Ammonia as N	Cation Exchange Capacity	Electrical Conductivity (Lab)	Kjeldahl Nitrogen Total	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised)	Nitrogen (Total)	pH (Lab)	Reactive Phosphorus as P (Orthophosphate as P)	Moisture Content	Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Lead	Mercury	Nickel	Zinc	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluorooctanoic acid (PFPeA)	
	%	mg/kg	meq/100g	meq/100g	meq/100g	meq/100g	mg/kg	meq/100g	µS/cm	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	2	0.1	0.1	0.1	0.1	20	0.1	1	20	0.1	0.1	0.1	20	0.1	0.1	0.1	5	1	2	5		5	0.1	2	5	0.001	0.0002	0.0002	
NEPM 2013 Table 1A(1) Hills Res A Soil																		100	20		6,000		300	40	400	7,400				
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand >=0m, <1m																														
CRC CARE 2011 Table B4 Soil HSLs for Direct Contact - Intrusive Maintenance Worker																														
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space																		100												
NEPM 2013 Site Specific EILs - Urban Res & Public Open Space																				590	110				180	310				
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																														
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																														
PFAS NEMP 2020 Ecological indirect exposure																														
PFAS NEMP 2020 Ecological direct exposure																														
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)																														

	Field ID	Lab Report Number																													
18 Apr 2023	EIL-TP10-0.0-0.1	ES2314312	7.9	-	4.9	6.7	0.3	1.0	-	13.0	36	-	-	-	-	6.8	-	15.3	-	-	-	-	3.96	-	-	-	-	-	-	-	
18 Apr 2023	EIL-TP23-0.0-0.1	ES2314312	4.6	-	4.6	3.5	0.5	0.4	-	9.2	30	-	-	-	-	6.4	-	33.4	-	-	-	-	4.78	-	-	-	-	-	-	-	
18 Apr 2023	TP01-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.6	<5	<1	3	<5	-	6	<0.1	2	12	<0.001	<0.0002	<0.0002	
18 Apr 2023	TP01-0.2-0.3	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.0	10	<1	14	17	-	18	<0.1	11	37	-	-	-	
18 Apr 2023	TP02-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.0	11	<1	20	22	-	26	<0.1	14	58	<0.001	<0.0002	<0.0002	
18 Apr 2023	TP03-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.2	13	<1	23	32	-	99	<0.1	16	123	<0.001	<0.0002	<0.0002	
18 Apr 2023	TP07-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.7	18	<1	24	31	-	40	<0.1	11	76	<0.001	<0.0002	<0.0002	
18 Apr 2023	TP07-0.3-0.4	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.1	16	<1	28	18	-	33	<0.1	11	30	-	-	-	
18 Apr 2023	TP08-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.7	16	<1	27	28	-	40	<0.1	11	67	<0.001	<0.0002	<0.0002	
18 Apr 2023	TP08-0.4-0.5	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.9	12	<1	22	23	-	34	<0.1	10	48	-	-	-	
18 Apr 2023	TP09-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.4	12	<1	16	32	-	29	<0.1	14	82	<0.001	<0.0002	<0.0002	
18 Apr 2023	TP09-0.5-0.6	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.1	14	<1	21	33	-	11	<0.1	17	78	-	-	-	
18 Apr 2023	TP13-0.2-0.3	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.6	10	<1	28	14	-	20	<0.1	8	41	-	-	-	
18 Apr 2023	TP14-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.2	11	<1	20	21	-	38	<0.1	10	60	<0.001	0.0003	<0.0002	
18 Apr 2023	TP14-0.3-0.4	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36.6	8	<1	16	23	-	13	<0.1	9	52	-	-	-	
18 Apr 2023	TP15-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.3	5	<1	11	14	-	13	<0.1	7	40	<0.001	<0.0002	<0.0002	
18 Apr 2023	TP15-0.3-0.4	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.4	10	<1	18	21	-	22	<0.1	10	53	-	-	-	
18 Apr 2023	TP16-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.0	15	<1	22	20	-	30	<0.1	11	50	<0.001	<0.0002	<0.0002	
18 Apr 2023	TP16-0.2-0.3	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.7	13	<1	17	25	-	16	<0.1	11	52	-	-	-	
18 Apr 2023	TP17-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29.9	12	<1	16	18	-	27	<0.1	9	43	<0.001	<0.0002	<0.0002	
18 Apr 2023	TP18-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.6	11	<1	16	20	-	27	<0.1	11	53	<0.001	<0.0002	<0.0002	
18 Apr 2023	TP19-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18 Apr 2023	TP19-0.3-0.4	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.4	12	<1	20	16	-	14	<0.1	8	28	-	-	-	
18 Apr 2023	TP20-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.0	12	<1	16	19	-	24	<0.1	8	97	<0.001	0.0008	0.0004	
18 Apr 2023	TP21-0.0-0.1	ES2313155	-	-	573	-	-	-	<20	-	-	2,160	1.0	0.2	1.2	2,160	-	1.0	10.8	7	<1	12	14	-	21	<0.1	7	48	<0.001	0.0010	0.0003
18 Apr 2023	TP22-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.6	14	<1	19	24	-	33	<0.1	10	56	<0.001	<0.0002	<0.0002	
18 Apr 2023	TP22-0.2-0.3	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22.6	13	<1	19	24	-	22	<0.1	11	52	-	-	-	
18 Apr 2023	TP23-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.5	13	<1	21	21	-	34	<0.1	11	80	<0.001	<0.0002	<0.0002	
19 Apr 2023	TP04-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.8	11	<1	22	87	-	57	<0.1	14	368	<0.001	<0.0002	<0.0002	
19 Apr 2023	TP05-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.5	10	<1	16	27	-	30	<0.1	10	58	<0.001	<0.0002	<0.0002	
19 Apr 2023	TP06-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.4	12	<1	22	18	-	27	<0.1	10	41	<0.001	<0.0002	<0.0002	
19 Apr 2023	TP08-A-0.5-0.6	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.1	<5	<1	<2	<5	-	<5	<0.1	<2	6	-	-	-	
19 Apr 2023	TP08-A-FC01	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19 Apr 2023	TP08-B-0.1-0.2	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19 Apr 2023	TP08-C-0.1-0.2	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19 Apr 2023	TP08-C-0.4-0.5	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.2	14	<1	24	16	-	33	<0.1	10	37	-	-	-	
19 Apr 2023	TP08-D-0.1-0.2	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19 Apr 2023	TP10-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.1	11	<1	16	25	-	24	<0.1	12	61	<0.001	<0.0002	<0.0002	
19 Apr 2023	TP11-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.1	<5	<1	14	8	-	11	<0.1	8	18	<0.001	<0.0002	<0.0002	
19 Apr 2023	TP11-0.1-0.2	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.3	<5	<1	5	<5	-	8	<0.1	2	17	-	-	-	
19 Apr 2023	TP12-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.7	15	<1	22	16	-	28	<0.1	9	48	<0.001	<0.0002	<0.0002	
19 Apr 2023	TP13-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.4	12	<1	22	19	-	23	<0.1	10	79	-	-	-	
19 Apr 2023	TP24-0.0-0.1	ES2313155	-	178	-	-	-	-	<20	-	-	990	0.4	0.6	1.0	990	-	1.0	18.5	14	<1	23	14	-	17	<0.1	6	24	<0.001	0.0006	0.0002
19 Apr 2023	TP25-0.0-0.1	ES2313155	-	531	-	-	-	-	<20	-	-	1,770	3.6	0.2	3.8	1,770	-	3.0	13.3	15	<1	25	29	-	39	<0.1	7	38	<0.001	0.0008	0.0005
20 Apr 2023	HA01-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.5	<5	<1	6	<5	-	6	<0.1	3	13	-	-	-	
20 Apr 2023	HA02-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.3	<5	<1	11	14	-	14	<0.1	6	45	-	-	-	
20 Apr 2023	HA03-0.1-0.2	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.5	8	<1	21	16	-	30	<0.1	6	75	-	-	-	
20 Apr 2023	HA04-0.1-0.2	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.5	<5	<1	13	18	-	39	<0.1	7	112	-	-	-	
20 Apr 2023	HA05-0.2-0.3	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.4	6	<1	16	10	-	39	<0.1	5	52	-	-	-	
20 Apr 2023	HA06-0.2-0.3	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.3	9	<1	10	9	-	13	<0.1	4	22	-	-	-	
20 Apr 2023	HA07-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.8	6	<1	14	27	-	28	<0.1	9	109	-	-	-	
20 Apr 2023	HA08-0.1-0.2	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.0	6	<1	12	13	-	24	<0.1	5	46	-	-	-	
20 Apr 2023	HA09-0.1-0.2	ES2313155	-	190	-	-	-	-	<20	-	-	730	8.0	<0.1	8.0	740	-	0.3	7.7	5	<1	13	11	-	21	<0.1	6	66	-	-	-
20 Apr 2023	HA10-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-														

[illegible]

Table G1 - Summary of Soil Laboratory Results

								Phenols											(n:2) Fluorotelomer Sulfonic Acids				PCBs	Acid Sulphate Soils	Organic	Particle Size				
	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)	Phenol	2-Chlorophenol	3&4-Methylphenol (m&p-cresol)	2,4,5-Trichlorophenol	2,4-Dichlorophenol	2,4,6-Trichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	Pentachlorophenol	2-Methylphenol	2-Nitrophenol	4-chloro-3-methylphenol	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PCBs (Sum of total)	pH (CaCl2)	% Total Organic Carbon	Clay in soils <2um	Density	4:4-DDE	
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	%	%	g/cm3	mg/kg
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.0005	0.0005	0.0005	0.0005	0.1	0.1		1	0.01	0.05	
NEPM 2013 Table 1A(1) HILs Res A Soil				3	3	3	300	3,000								100								1						
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand >=0m, <1m	3																													
CRC CARE 2011 Table B4 Soil HSLs for Direct Contact - Intrusive Maintenance Worker																														
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space	170																													
NEPM 2013 Site Specific EILs - Urban Res & Public Open Space																														
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																														
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																														
PFAS NEMP 2020 Ecological indirect exposure																														
PFAS NEMP 2020 Ecological direct exposure																														
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)																														

	Field ID	Lab Report Number																											
18 Apr 2023	EIL-TP10-0.0-0.1	ES2314312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.2	1.0	32	2.41	-
18 Apr 2023	EIL-TP23-0.0-0.1	ES2314312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.4	0.6	30	2.13	-	
18 Apr 2023	TP01-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP01-0.2-0.3	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP02-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP03-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP07-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP07-0.3-0.4	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	-	-	-	-	<0.1	-	-	-	<0.05	
18 Apr 2023	TP08-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP08-0.4-0.5	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	-	-	-	-	<0.1	-	-	-	<0.05	
18 Apr 2023	TP09-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP09-0.5-0.6	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP13-0.2-0.3	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	-	-	-	-	<0.1	-	-	-	<0.05	
18 Apr 2023	TP14-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP14-0.3-0.4	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	-	-	-	-	<0.1	-	-	-	<0.05	
18 Apr 2023	TP15-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP15-0.3-0.4	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	-	-	-	-	<0.1	-	-	-	<0.05	
18 Apr 2023	TP16-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP16-0.2-0.3	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP17-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP18-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP19-0.0-0.1	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	-	
18 Apr 2023	TP19-0.3-0.4	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP20-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP21-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP22-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
18 Apr 2023	TP22-0.2-0.3	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	-	-	-	-	<0.1	-	-	-	<0.05	
18 Apr 2023	TP23-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
19 Apr 2023	TP04-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
19 Apr 2023	TP05-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
19 Apr 2023	TP06-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
19 Apr 2023	TP08-A-0.5-0.6	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
19 Apr 2023	TP08-A-FC01	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19 Apr 2023	TP08-B-0.1-0.2	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19 Apr 2023	TP08-C-0.1-0.2	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19 Apr 2023	TP08-C-0.4-0.5	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	-	-	-	-	<0.1	-	-	-	<0.05	
19 Apr 2023	TP08-D-0.1-0.2	ES2313155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19 Apr 2023	TP10-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
19 Apr 2023	TP11-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
19 Apr 2023	TP11-0.1-0.2	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
19 Apr 2023	TP12-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
19 Apr 2023	TP13-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
19 Apr 2023	TP24-0.0-0.1	ES2313155	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005	<0.1	-	-	-	<0.05	
19 Apr 2023	TP25-0.0-0.1	ES2313155	<0.																										

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				Asbestos		
				Asbestos detected?	Asbestos (Trace)	Asbestos type (if detected)
				g/kg	Fibres	-
EQL				0.1	5	
Adopted assessment criteria				No asbestos detected	No asbestos detected	
Field ID	Date	Lab Report Number	Media			
HA01-0.0-0.1	20 Apr 2023	ES2313155	Soil	No	No	-
HA02-0.0-0.1	20 Apr 2023	ES2313155	Soil	No	No	-
HA03-0.1-0.2	20 Apr 2023	ES2313155	Soil	No	No	-
HA04-0.1-0.2	20 Apr 2023	ES2313155	Soil	No	No	-
HA05-0.2-0.3	20 Apr 2023	ES2313155	Soil	No	No	-
HA06-0.2-0.3	20 Apr 2023	ES2313155	Soil	No	No	-
HA07-0.0-0.1	20 Apr 2023	ES2313155	Soil	No	No	-
HA08-0.1-0.2	20 Apr 2023	ES2313155	Soil	No	No	-
HA09-0.1-0.2	20 Apr 2023	ES2313155	Soil	No	No	-
HA10-0.0-0.1	20 Apr 2023	ES2313155	Soil	No	No	-
HA11-0.1-0.2	20 Apr 2023	ES2313155	Soil	No	No	-
HA12-0.1-0.2	20 Apr 2023	ES2313155	Soil	No	No	-
HA13-0.1-0.2	20 Apr 2023	ES2313155	Soil	No	No	-
HA14-0.1-0.2	20 Apr 2023	ES2313155	Soil	No	No	-
HA15-0.1-0.2	20 Apr 2023	ES2313155	Soil	No	No	-
TP01-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP02-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP03-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP04-0.0-0.1	19 Apr 2023	ES2313155	Soil	No	No	-
TP05-0.0-0.1	19 Apr 2023	ES2313155	Soil	No	No	-
TP06-0.0-0.1	19 Apr 2023	ES2313155	Soil	No	No	-
TP07-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP07-0.3-0.4	18 Apr 2023	ES2313155	Soil	No	No	-
TP08-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP08-0.4-0.5	18 Apr 2023	ES2313155	Soil	No	No	-
TP08-A-0.5-0.6	19 Apr 2023	ES2313155	Soil	No	No	-
TP08-A-FC01	19 Apr 2023	ES2313155	ACM fragment	Yes	N/A	Ch + Am
TP08-B-0.1-0.2	19 Apr 2023	ES2313155	Soil	No	No	-
TP08-C-0.1-0.2	19 Apr 2023	ES2313155	Soil	No	No	-
TP08-D-0.1-0.2	19 Apr 2023	ES2313155	Soil	No	No	-
TP08-FC01	18 Apr 2023	ES2312740	ACM fragment	Yes	N/A	Ch + Am
TP08-FC02	18 Apr 2023	ES2312740	ACM fragment	Yes	N/A	Ch + Am
TP09-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP10-0.0-0.1	19 Apr 2023	ES2313155	Soil	No	No	-
TP11-0.0-0.1	19 Apr 2023	ES2313155	Soil	No	No	-
TP12-0.0-0.1	19 Apr 2023	ES2313155	Soil	No	No	-
TP13-0.0-0.1	19 Apr 2023	ES2313155	Soil	No	No	-
TP13-0.2-0.3	18 Apr 2023	ES2313155	Soil	No	No	-
TP14-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP15-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP15-0.3-0.4	18 Apr 2023	ES2313155	Soil	No	No	-
TP16-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP17-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP18-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP19-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP20-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP21-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP22-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP23-0.0-0.1	18 Apr 2023	ES2313155	Soil	No	No	-
TP24-0.0-0.1	19 Apr 2023	ES2313155	Soil	No	No	-
TP25-0.0-0.1	19 Apr 2023	ES2313155	Soil	No	No	-

Notes:
* Ch: Chrysotile; Am: Amosite

	Metals								TRH							BTEX									
	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	Naphthalene (VOC)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)					
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L					
EQL	1	0.1	1	1	1	0.1	1	5	20	20	100	100	100	100	100	0.005	1	2	2	2					
Field ID																					Date		Lab Report Number		
Rinsate 2		20 Apr 2023		ES2313155		<1	<0.1	<1	<1	<1	<0.1	<1	<5	<20	<20	<100	<100	<100	<100	<100	<0.005	<1	<2	<2	<2

				PAH																	
	Xylene (o)	Xylene Total	Total BTEX	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Zero)	
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	
EQL	2	2	1	1	1	1	1	0.5	0.001	1	1	1	1	1	1	1	1	1	1	0.0005	
Field ID																					
Date		Lab Report Number																			
Rinsate 2	20 Apr 2023	ES2313155	<2	<2	<1	<1.0	<1.0	<1.0	<1.0	<0.5	<0.0010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.0005

		Phenols												PCBs						
PAHs (Sum of total)		Phenol	2-Chlorophenol	3&4-Methylphenol (m&p-cresol)	2,4,5-Trichlorophenol	2,4-Dichlorophenol	2,4,6-Trichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	Pentachlorophenol	2-Methylphenol	2-Nitrophenol	4-chloro-3-methylphenol	PCBs (Sum of total)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane
µg/L		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQ		0.5	1	1	2	1	1	1	1	2	1	1	1	1	0.5	0.5	0.5	0.5	0.5	0.5
Field ID	Date	Lab Report Number																		
Rinsate 2	20 Apr 2023	ES2313155	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

	Organochlorine Pesticides																			
	Chlordane (cis)	Chlordane (trans)	α-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Azinophos methyl	Bromophos-ethyl
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5

Field ID	Date	Lab Report Number	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5
Rinsate 2	20 Apr 2023	ES2313155	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5

	Organophosphorous Pesticides														Pesticides			TPH																																																																																																																																
	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion	Malathion	Methyl parathion	Monocrotophos	Parathion	Prothiofos	Demeton-S-methyl	Fenamiphos	Pirimphos-ethyl	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction																																																																																																																														
	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L																																																																																																																														
EQ	0.5	0.5	0.5	0.0005	0.5	0.5	0.5	0.5	0.5	0.5	2	2	2	0.5	0.5	0.5	0.5	20	50	100																																																																																																																														
Field ID																					Date																					Lab Report Number																																																																																																								
Rinsate 2							20 Apr 2023							ES2313155							<0.5							<0.5							<0.5							<0.0005							<0.5							<0.5							<0.5							<0.5							<2.0							<2.0							<2.0							<0.5							<0.5							<0.5							<0.5							<20							<50							<100						

			C29-C36 Fraction	C10-C36 Fraction (Sum)
			µg/L	µg/L
EQL			50	50
Field ID	Date	Lab Report Number		
Rinsate 2	20 Apr 2023	ES2313155	<50	<50

Field ID Date Lab Report Number Matrix Type			TP20-0.0-0.1		RPD	DUP01		RPD	TP21-0.0-0.1		RPD	DUP02		RPD
			18 Apr 2023			18 Apr 2023			18 Apr 2023			18 Apr 2023		
			ES2313155			ES2313155			ES2313155			ES2313155		
			Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil	
	Unit	EQL												
Inorganics														
Total Phosphorus as P (Organic Phosphate as P)	mg/kg	2	-	-	-	-	-	-	-	573	-	-	-	
Ammonia as N	mg/kg	20	-	-	-	-	-	-	-	<20	-	-	-	
Kjeldahl Nitrogen Total	mg/kg	20	-	-	-	-	-	-	-	2,160	-	-	-	
Moisture Content (dried @ 103°C)	%	1	-	-	-	-	22	-	-	-	-	-	-	
Nitrate (as N)	mg/kg	0.1	-	-	-	-	-	-	-	1.0	-	-	-	
Nitrite (as N)	mg/kg	0.1	-	-	-	-	-	-	-	0.2	-	-	-	
Nitrogen (Total Oxidised)	mg/kg	0.1	-	-	-	-	-	-	-	1.2	-	-	-	
Nitrogen (Total)	mg/kg	20	-	-	-	-	-	-	-	2,160	-	-	-	
Reactive Phosphorus as P (Orthophosphate as P)	mg/kg	0.1	-	-	-	-	-	-	-	1.0	-	-	-	
NA														
Moisture Content	%	1	15.0	32.6	74	15.0	-	-	-	10.8	21.8	67		
Metals														
Arsenic	mg/kg	2	12	8	40	12	7.4	47	7	14	67			
Cadmium	mg/kg	0.4	<1	<1	0	<1	<0.4	0	<1	<1	0			
Chromium (III+VI)	mg/kg	2	16	12	29	16	11	37	12	19	45			
Copper	mg/kg	5	19	20	5	19	17	11	14	24	53			
Lead	mg/kg	5	24	23	4	24	19	23	21	38	58			
Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0			
Nickel	mg/kg	2	8	6	29	8	6.0	29	7	10	35			
Zinc	mg/kg	5	97	107	10	97	110	13	48	61	24			
Perfluoroalkane Carboxylic Acids														
Perfluorobutanoic acid (PFBA)	mg/kg	0.001	<0.001	<0.001	0	<0.001	-	-	<0.001	<0.001	0			
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002	0.0008	0.0010	22	0.0008	-	-	0.0010	<0.0002	133			
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002	0.0004	0.0005	22	0.0004	-	-	0.0003	<0.0002	40			
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002	0.0003	0.0003	0	0.0003	-	-	0.0003	<0.0002	40			
Perfluorooctanoic acid (PFOA)	mg/kg	0.0002	0.0019	0.0020	5	0.0019	<0.005	0	0.0007	<0.0002	111			
Perfluoroalkane Sulfonic Acids														
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002	0.0003	0.0003	0	0.0003	-	-	0.0002	<0.0002	0			
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002	0.0054	0.0057	5	0.0054	<0.005 ⁴²	8	0.0012	<0.0002	143			
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.0002	0.167	0.206	21	0.167	0.15 ⁴²	11	0.0050	0.0009	139			
BTEX														
Naphthalene (VOC)	mg/kg	0.5	<1	<1	0	<1	<0.5	0	<1	<1	0			
Benzene	mg/kg	0.1	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.2	0			
Toluene	mg/kg	0.1	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0			
Ethylbenzene	mg/kg	0.1	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0			
Xylene (m & p)	mg/kg	0.2	<0.5	<0.5	0	<0.5	<0.2	0	<0.5	<0.5	0			
Xylene (o)	mg/kg	0.1	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0			
Xylene Total	mg/kg	0.3	<0.5	<0.5	0	<0.5	<0.3	0	<0.5	<0.5	0			
Total BTEX	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0			
PAH														
Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Benzo(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Benzo(a) pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Benzo(b+j)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Chrysene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Fluorene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Naphthalene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0			
Benzo(a)pyrene TEQ (LOR)	mg/kg	0.5	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0			
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
PAHs (Sum of total)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0			
Phenols														
Phenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0			
2-Chlorophenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0			
3&4-Methylphenol (m&p-cresol)	mg/kg	1	<1	<1	0	<1	-	-	<1	<1	0			
2,4,5-Trichlorophenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0			
2,4-Dichlorophenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0			
2,4,6-Trichlorophenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0			
2,4-Dimethylphenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0			
2,6-Dichlorophenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0			
Pentachlorophenol	mg/kg	2	<2	<2	0	<2	-	-	<2	<2	0			
2-Methylphenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0			
2-Nitrophenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0			
4-chloro-3-methylphenol	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0			
(n:2) Fluorotelomer Sulfonic Acids														
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	-	-	<0.0005	<0.0005	0			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	<0.01	0	<0.0005	<0.0005	0			
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	-	-	<0.0005	<0.0005	0			
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	0	<0.0005	-	-	<0.0005	<0.0005	0			
Biota														
Biota Description	-		1 ⁴¹	-	-	1 ⁴¹	-	-	1 ⁴¹	-	-			
PCBs														
Arochlor 1016	mg/kg	0.1	-	-	-	-	<0.1	-	-	-	-	-		
Arochlor 1221	mg/kg	0.1	-	-	-	-	<0.1	-	-	-	-	-		
Arochlor 1232	mg/kg	0.1	-	-	-	-	<0.1	-	-	-	-	-		
Arochlor 1242	mg/kg	0.1	-	-	-	-	<0.1	-	-	-	-	-		
Arochlor 1248	mg/kg	0.1	-	-	-	-	<0.1	-	-	-	-	-		
Arochlor 1254	mg/kg	0.1	-	-	-	-	<0.1	-	-	-	-	-		
Arochlor 1260	mg/kg	0.1	-	-	-	-	<0.1	-	-	-	-	-		
PCBs (Sum of total)	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0			
Organochlorine Pesticides														
Organochlorine pesticides EPAVic	mg/kg	0.1												

Field ID			TP20-0.0-0.1			DUP01			TP20-0.0-0.1			DUP01A			TP21-0.0-0.1			DUP02		
Date			18 Apr 2023			18 Apr 2023			18 Apr 2023			18 Apr 2023			18 Apr 2023			18 Apr 2023		
Lab Report Number			ES2313155			ES2313155			ES2313155			983682			ES2313155			ES2313155		
Matrix Type			Soil			Soil			Soil			Soil			Soil			Soil		
RPD			-			-			-			-			-			-		
Unit			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
EOL			0.2			0.05			0.05			0.05			0.05			0.05		
Demeton-S	mg/kg	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Diazinon	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	
Dichlorvos	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	
Dimethoate	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	
Disulfoton	mg/kg	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethion	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	
Ethoprop	mg/kg	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Fenitrothion	mg/kg	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Fensulfothion	mg/kg	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Fenthion	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	
EPN	mg/kg	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Malathion	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.2	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	
Merphos	mg/kg	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Methyl parathion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	
Mevinphos (Phosdrin)	mg/kg	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Monocrotophos	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	
Naled (Dibrom)	mg/kg	0.2	-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	
Omethoate	mg/kg	2	-	-	-	-	-	-	-	<2	-	-	-	-	-	-	-	-	-	
Parathion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	
Phorate	mg/kg	0.2	-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	
Pirimiphos-methyl	mg/kg	0.2	-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	
Prothiofos	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	
Pyrazophos	mg/kg	0.2	-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	
Ronnel	mg/kg	0.2	-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	
Terbufos	mg/kg	0.2	-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	
Trichloronate	mg/kg	0.2	-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	
Tetrachlorvinphos	mg/kg	0.2	-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	
Pesticides																				
Demeton-S-methyl	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	
Fenamiphos	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	
Pirimphos-ethyl	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	-	-	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	
TRH																				
C6-C10 Fraction (F1)	mg/kg	10	<10	<10	0	<10	<10	0	<10	<20	0	<10	<10	0	<10	<10	0	<10	<10	
C6-C10 (F1 minus BTEX)	mg/kg	10	<10	<10	0	<10	<10	0	<10	<20	0	<10	<10	0	<10	<10	0	<10	<10	
>C10-C16 Fraction (F2)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	
>C10-C16 Fraction (F2 minus Naphthalene)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	
>C16-C34 Fraction (F3)	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	
>C34-C40 Fraction (F4)	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	
>C10-C40 Fraction (Sum)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<100	0	<50	<50	0	<50	<50	0	<50	<50	
TPH																				
C6-C9 Fraction	mg/kg	10	<10	<10	0	<10	<10	0	<10	<20	0	<10	<10	0	<10	<10	0	<10	<10	
C10-C14 Fraction	mg/kg	20	<50	<50	0	<50	<50	0	<50	<20	0	<50	<50	0	<50	<50	0	<50	<50	
C15-C28 Fraction	mg/kg	50	<100	<100	0	<100	<100	0	<100	<50	0	<100	<100	0	<100	<100	0	<100	<100	
C29-C36 Fraction	mg/kg	50	<100	<100	0	<100	<100	0	<100	<50	0	<100	<100	0	<100	<100	0	<100	<100	
C10-C36 Fraction (Sum)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	
PFAS																				
Sum of PFHxS and PFOS	mg/kg	0.0002	0.172	0.212	21	0.172	0.15	14	0.0062	0.0009	149	0.0062	0.0009	149	0.0062	0.0009	149	0.0062	0.0009	
Sum of PFAS (WA DER List)	mg/kg	0.0002	0.176	0.216	20	0.176	-	-	0.0087	0.0009	162	0.0087	0.0009	162	0.0087	0.0009	162	0.0087	0.0009	
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)	mg/kg	0.005	-	-	-	-	0.15	-	-	-	-	-	-	-	-	-	-	-	-	
Sum of PFAS (PFOS + PFOA)	mg/kg	0.005	-	-	-	-	0.15	-	-	-	-	-	-	-	-	-	-	-	-	

Comments
#1 Soil sample.
#2 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 999 (1 - 10 x EQL); 30 (10 - 30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Appendix H

Laboratory Reports



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2313155**

Client	: SMEC AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: SAM VAUGHAN	Contact	: Katie Davis
Address	: Level 5, 20 Berry Street, North Sydney, NSW 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: sam.vaughan@smec.com	E-mail	: katie.davis@alsglobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SINSW - Austral PS	Page	: 1 of 6
Order number	: SINSW AUST 30018043 210.1 BATCH 1 of 1	Quote number	: ES2021SMEAUS0010 (EN/025/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: HARRISON WOOD		

Dates

Date Samples Received	: 20-Apr-2023 15:55	Issue Date	: 21-Apr-2023
Client Requested Due Date	: 28-Apr-2023	Scheduled Reporting Date	: 28-Apr-2023

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 5	Temperature	: 1.6°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 114 / 64
		No. of samples NOT collected	: 1

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Asbestos analysis could not be conducted for sample 21 and 33 as no bag was provided.**
- **Sample DUP01A has been forwarded to Eurofins.**
- **Faecal coliforms for samples 49, 57, 59, 77 and 84 could not be conducted as no sterile jar was provided.**
- **Samples 114 and 115 received as extra.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **PFAS analysis could not be conducted for sample 26 as no grey soil jar was provided.**
- **S-19 analysis could not be conducted for sample 44 as no glass soil jar was provided.**
- Sample DUP04A was not received due to the following reason: Sample not received
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months $\pm$ 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2313155-113 : [11-Apr-2023] : Trip Spike Control - 17

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: SOIL

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils - SOIL - EP231 (solids)	PFAS - Short Suite (12 analytes)	SOIL - NT-8AS NH3, NO2, NO3, TKN, TP, RP	SOIL - S-19 TRH/BTEX/NPAH/Ph/OC/OP/PCB/8 metals
ES2313155-001	18-Apr-2023 00:00	TP01-0.0-0.1		✓	✓	✓		✓
ES2313155-002	18-Apr-2023 00:00	TP01-0.2-0.3		✓				✓
ES2313155-003	18-Apr-2023 00:00	TP01-0.4-0.5	✓					
ES2313155-004	18-Apr-2023 00:00	TP02-0.0-0.1		✓	✓	✓		✓
ES2313155-005	18-Apr-2023 00:00	TP02-0.2-0.3	✓					
ES2313155-006	18-Apr-2023 00:00	TP03-0.0-0.1		✓	✓	✓		✓
ES2313155-007	18-Apr-2023 00:00	TP03-0.3-0.4	✓					
ES2313155-008	19-Apr-2023 00:00	TP04-0.0-0.1		✓	✓	✓		✓
ES2313155-009	19-Apr-2023 00:00	TP04-0.2-0.3	✓					
ES2313155-010	19-Apr-2023 00:00	TP05-0.0-0.1		✓	✓	✓		✓
ES2313155-011	19-Apr-2023 00:00	TP05-0.4-0.5	✓					
ES2313155-012	19-Apr-2023 00:00	TP06-0.0-0.1		✓	✓	✓		✓
ES2313155-013	19-Apr-2023 00:00	TP06-0.2-0.3	✓					
ES2313155-014	18-Apr-2023 00:00	TP07-0.0-0.1		✓	✓	✓		✓
ES2313155-015	18-Apr-2023 00:00	TP07-0.3-0.4		✓	✓			✓
ES2313155-016	18-Apr-2023 00:00	TP07-0.6-0.7	✓					
ES2313155-017	18-Apr-2023 00:00	TP08-0.0-0.1		✓	✓	✓		✓
ES2313155-018	18-Apr-2023 00:00	TP08-0.4-0.5		✓	✓			✓
ES2313155-019	18-Apr-2023 00:00	TP08-0.5-0.6	✓					
ES2313155-020	18-Apr-2023 00:00	TP09-0.0-0.1		✓	✓	✓		✓
ES2313155-021	18-Apr-2023 00:00	TP09-0.5-0.6		✓				✓
ES2313155-022	19-Apr-2023 00:00	TP10-0.0-0.1		✓	✓	✓		✓
ES2313155-023	19-Apr-2023 00:00	TP10-0.4-0.5	✓					
ES2313155-024	19-Apr-2023 00:00	TP11-0.0-0.1		✓	✓	✓		✓
ES2313155-025	19-Apr-2023 00:00	TP11-0.1-0.2		✓				✓
ES2313155-026	19-Apr-2023 00:00	TP11-0.3-0.4	✓					
ES2313155-027	19-Apr-2023 00:00	TP12-0.0-0.1		✓	✓	✓		✓
ES2313155-028	19-Apr-2023 00:00	TP12-0.3-0.4	✓					
ES2313155-029	19-Apr-2023 00:00	TP13-0.0-0.1		✓	✓			✓
ES2313155-030	18-Apr-2023 00:00	TP13-0.2-0.3		✓	✓			✓
ES2313155-031	18-Apr-2023 00:00	TP13-0.3-0.4	✓					
ES2313155-032	18-Apr-2023 00:00	TP14-0.0-0.1		✓	✓	✓		✓
ES2313155-033	18-Apr-2023 00:00	TP14-0.3-0.4		✓				✓



			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils - SOIL - EP231 (soils)	PFAS - Short Suite (12 analytes)	SOIL - NT-8AS NH3, NO2, NO3, NOX, TKN, TN, TP, RP	SOIL - S-19 TRH/TEXN/PAH/Ph/OC/OP/PCB/8 metals
ES2313155-034	18-Apr-2023 00:00	TP15-0.0-0.1		✓	✓	✓		✓
ES2313155-035	18-Apr-2023 00:00	TP15-0.3-0.4		✓	✓			✓
ES2313155-036	18-Apr-2023 00:00	TP15-0.4-0.5	✓					
ES2313155-037	18-Apr-2023 00:00	TP16-0.0-0.1		✓	✓	✓		✓
ES2313155-038	18-Apr-2023 00:00	TP16-0.2-0.3		✓				✓
ES2313155-039	18-Apr-2023 00:00	TP16-0.4-0.5	✓					
ES2313155-040	18-Apr-2023 00:00	TP17-0.0-0.1		✓	✓	✓		✓
ES2313155-041	18-Apr-2023 00:00	TP17-0.2-0.3	✓					
ES2313155-042	18-Apr-2023 00:00	TP18-0.0-0.1		✓	✓	✓		✓
ES2313155-043	18-Apr-2023 00:00	TP18-0.2-0.3	✓					
ES2313155-044	18-Apr-2023 00:00	TP19-0.0-0.1		✓	✓	✓		
ES2313155-045	18-Apr-2023 00:00	TP19-0.3-0.4		✓				✓
ES2313155-046	18-Apr-2023 00:00	TP19-0.5-0.6	✓					
ES2313155-047	18-Apr-2023 00:00	TP20-0.0-0.1		✓	✓	✓		✓
ES2313155-048	18-Apr-2023 00:00	TP20-0.3-0.4	✓					
ES2313155-049	18-Apr-2023 00:00	TP21-0.0-0.1		✓	✓	✓	✓	✓
ES2313155-050	18-Apr-2023 00:00	TP21-0.2-0.3	✓					
ES2313155-051	18-Apr-2023 00:00	TP21-0.5-0.6	✓					
ES2313155-052	18-Apr-2023 00:00	TP22-0.0-0.1		✓	✓	✓		✓
ES2313155-053	18-Apr-2023 00:00	TP22-0.2-0.3		✓				✓
ES2313155-054	18-Apr-2023 00:00	TP22-0.5-0.6	✓					
ES2313155-055	18-Apr-2023 00:00	TP23-0.0-0.1		✓	✓	✓		✓
ES2313155-056	18-Apr-2023 00:00	TP23-0.3-0.4	✓					
ES2313155-057	19-Apr-2023 00:00	TP24-0.0-0.1		✓	✓	✓	✓	✓
ES2313155-058	19-Apr-2023 00:00	TP24-0.3-0.4	✓					
ES2313155-059	19-Apr-2023 00:00	TP25-0.0-0.1		✓	✓	✓	✓	✓
ES2313155-060	19-Apr-2023 00:00	TP25-0.3-0.4	✓					
ES2313155-061	20-Apr-2023 00:00	HA01-0.0-0.1		✓	✓			✓
ES2313155-062	20-Apr-2023 00:00	HA01-0.3-0.4	✓					
ES2313155-063	20-Apr-2023 00:00	HA02-0.0-0.1		✓	✓			✓
ES2313155-064	20-Apr-2023 00:00	HA02-0.2-0.3	✓					
ES2313155-065	20-Apr-2023 00:00	HA02-0.3-0.4	✓					
ES2313155-066	20-Apr-2023 00:00	HA03-0.1-0.2		✓	✓			✓
ES2313155-067	20-Apr-2023 00:00	HA03-0.4-0.5	✓					
ES2313155-068	20-Apr-2023 00:00	HA04-0.1-0.2		✓	✓			✓
ES2313155-069	20-Apr-2023 00:00	HA04-0.4-0.5	✓					
ES2313155-070	20-Apr-2023 00:00	HA05-0.2-0.3		✓	✓			✓
ES2313155-071	20-Apr-2023 00:00	HA06-0.2-0.3		✓	✓			✓
ES2313155-072	20-Apr-2023 00:00	HA06-0.5-0.6	✓					
ES2313155-073	20-Apr-2023 00:00	HA07-0.0-0.1		✓	✓			✓
ES2313155-074	20-Apr-2023 00:00	HA07-0.1-0.2	✓					



			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils - SOIL - EP231 (soils) PFAS - Short Suite (12 analytes)	SOIL - NT-8AS NH3, NO2, NO3, NOX, TKN, TN, TP, RP	SOIL - S-19 TRH/TEXN/PAH/Ph/OC/OP/PCB/8 metals
ES2313155-075	20-Apr-2023 00:00	HA08-0.1-0.2		✓	✓		✓
ES2313155-076	20-Apr-2023 00:00	HA08-0.3-0.4	✓				
ES2313155-077	20-Apr-2023 00:00	HA09-0.1-0.2		✓	✓	✓	✓
ES2313155-078	20-Apr-2023 00:00	HA09-0.3-0.4	✓				
ES2313155-079	20-Apr-2023 00:00	HA10-0.0-0.1		✓	✓		✓
ES2313155-080	20-Apr-2023 00:00	HA10-0.2-0.3		✓			✓
ES2313155-081	20-Apr-2023 00:00	HA10-0.4-0.5	✓				
ES2313155-082	20-Apr-2023 00:00	HA11-0.1-0.2		✓	✓		✓
ES2313155-083	20-Apr-2023 00:00	HA11-0.4-0.5	✓				
ES2313155-084	20-Apr-2023 00:00	HA12-0.1-0.2		✓	✓	✓	✓
ES2313155-085	20-Apr-2023 00:00	HA13-0.1-0.2		✓	✓		✓
ES2313155-086	20-Apr-2023 00:00	HA13-0.3-0.4	✓				
ES2313155-087	20-Apr-2023 00:00	HA14-0.1-0.2		✓	✓	✓	✓
ES2313155-088	20-Apr-2023 00:00	HA15-0.1-0.2		✓	✓		✓
ES2313155-089	20-Apr-2023 00:00	HA15-0.3-0.4	✓				
ES2313155-091	19-Apr-2023 00:00	TP08-A-0.0-0.1	✓				
ES2313155-092	19-Apr-2023 00:00	TP08-A-0.5-0.6		✓	✓		✓
ES2313155-093	19-Apr-2023 00:00	TP08-A-0.8-0.9	✓				
ES2313155-094	19-Apr-2023 00:00	TP08-B-0.1-0.2			✓		
ES2313155-095	19-Apr-2023 00:00	TP08-B-0.4-0.5	✓				
ES2313155-096	19-Apr-2023 00:00	TP08-C-0.1-0.2			✓		
ES2313155-097	19-Apr-2023 00:00	TP08-C-0.4-0.5		✓			✓
ES2313155-098	19-Apr-2023 00:00	TP08-C-0.5-0.6	✓				
ES2313155-099	19-Apr-2023 00:00	TP08-D-0.1-0.2			✓		
ES2313155-100	19-Apr-2023 00:00	TP08-D-0.3-0.4	✓				
ES2313155-101	18-Apr-2023 00:00	DUP01		✓	✓		✓
ES2313155-102	18-Apr-2023 00:00	DUP02		✓	✓		✓
ES2313155-103	18-Apr-2023 00:00	DUP02A	✓				
ES2313155-104	18-Apr-2023 00:00	DUP03	✓				
ES2313155-105	18-Apr-2023 00:00	DUP03A	✓				
ES2313155-106	20-Apr-2023 00:00	DUP04	✓				
ES2313155-108	20-Apr-2023 00:00	EIL-TP10-0.0-0.1	✓				
ES2313155-109	18-Apr-2023 00:00	EIL-TP23-0.0-0.1	✓				
ES2313155-114	20-Apr-2023 00:00	DUP05	✓				
ES2313155-115	20-Apr-2023 00:00	DUP05A	✓				



Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EP080 BTEXN	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs
ES2313155-110	11-Apr-2023 00:00	Trip Spike - 17	✓	
ES2313155-111	11-Apr-2023 00:00	Trip Blank		✓
ES2313155-113	11-Apr-2023 00:00	Trip Spike Control -...	✓	

Matrix: **SOLID**

Laboratory sample ID	Sampling date / time	Sample ID	SOLID - EA200B Asbestos Identification in Bulk Solids (Excluding
ES2313155-090	19-Apr-2023 00:00	TP08-A-FC01	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - W-19T TRH/BTEXN/PAH/Phenols/OC/OP/PCB/8 metals
ES2313155-112	20-Apr-2023 00:00	Rinsate 2	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.



CERTIFICATE OF ANALYSIS

Work Order : **ES2313155**
Client : **SMEC AUSTRALIA PTY LTD**
Contact : SAM VAUGHAN
Address : Level 5, 20 Berry Street, North Sydney, NSW 2060
North Sydney 2060
Telephone : ----
Project : SINSW - Austral PS
Order number : SINSW AUST 30018043 210.1 BATCH 1 of 1
C-O-C number : ----
Sampler : HARRISON WOOD
Site : ----
Quote number : EN/025/21
No. of samples received : 115
No. of samples analysed : 64

Page : 1 of 83
Laboratory : Environmental Division Sydney
Contact : Katie Davis
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61-2-8784 8555
Date Samples Received : 20-Apr-2023 15:55
Date Analysis Commenced : 24-Apr-2023
Issue Date : 28-Apr-2023 18:00



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
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Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Poor spike recovery for Total P due to matrix interferences (confirmed by re-analysis).
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP068: Positive results have been confirmed by re-extraction and re-analysis.
- **EA200 Legend**
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Analysis of asbestos from swabs and tapes is not covered under the current scope of NATA accreditation.
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEXN only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.



- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.
- EA200: N/A - Not Applicable
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP01-0.0-0.1	TP01-0.2-0.3	TP02-0.0-0.1	TP03-0.0-0.1	TP04-0.0-0.1
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-001	ES2313155-002	ES2313155-004	ES2313155-006	ES2313155-008
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	-----	1.0	%	8.6	11.0	12.0	16.2	17.8
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	----	No	No	No
Asbestos Type	1332-21-4	-	--	-	----	-	-	-
Synthetic Mineral Fibre	-----	-	--	No	----	No	No	No
Organic Fibre	-----	-	--	No	----	No	No	No
Sample weight (dry)	-----	0.01	g	202	----	196	136	149
APPROVED IDENTIFIER:	-----	-	--	A. SMYLIE	----	A. SMYLIE	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	10	11	13	11
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	3	14	20	23	22
Copper	7440-50-8	5	mg/kg	<5	17	22	32	87
Lead	7439-92-1	5	mg/kg	6	18	26	99	57
Nickel	7440-02-0	2	mg/kg	2	11	14	16	14
Zinc	7440-66-6	5	mg/kg	12	37	58	123	368
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	-----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	-----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP01-0.0-0.1	TP01-0.2-0.3	TP02-0.0-0.1	TP03-0.0-0.1	TP04-0.0-0.1
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-001	ES2313155-002	ES2313155-004	ES2313155-006	ES2313155-008
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP01-0.0-0.1	TP01-0.2-0.3	TP02-0.0-0.1	TP03-0.0-0.1	TP04-0.0-0.1
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-001	ES2313155-002	ES2313155-004	ES2313155-006	ES2313155-008
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2

EP080/071: Total Petroleum Hydrocarbons



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01-0.0-0.1	TP01-0.2-0.3	TP02-0.0-0.1	TP03-0.0-0.1	TP04-0.0-0.1
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-001	ES2313155-002	ES2313155-004	ES2313155-006	ES2313155-008
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	-----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	-----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	-----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	-----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	-----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	-----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	-----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	-----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	----	<0.0002	0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		0.0005	----	<0.0002	0.0037	0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	<0.0002	<0.0002	<0.0002



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01-0.0-0.1	TP01-0.2-0.3	TP02-0.0-0.1	TP03-0.0-0.1	TP04-0.0-0.1
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-001	ES2313155-002	ES2313155-004	ES2313155-006	ES2313155-008
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		0.0005	----	<0.0002	0.0039	0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		0.0005	----	<0.0002	0.0039	0.0002
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		94.5	113	108	103	125
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		75.7	123	109	113	137
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		72.7	98.8	92.3	99.7	122
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		84.1	82.4	84.4	83.9	82.3
2-Chlorophenol-D4	93951-73-6	0.5	%		89.3	87.4	88.8	87.9	86.7
2,4,6-Tribromophenol	118-79-6	0.5	%		72.9	69.7	71.0	70.0	68.9
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		80.4	79.7	78.9	78.8	77.1
Anthracene-d10	1719-06-8	0.5	%		81.3	80.0	79.4	79.4	77.5
4-Terphenyl-d14	1718-51-0	0.5	%		88.6	88.2	87.5	86.7	85.2
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		120	114	116	110	108
Toluene-D8	2037-26-5	0.2	%		102	92.9	97.5	93.4	92.5
4-Bromofluorobenzene	460-00-4	0.2	%		98.8	90.4	91.7	85.9	89.8



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01-0.0-0.1	TP01-0.2-0.3	TP02-0.0-0.1	TP03-0.0-0.1	TP04-0.0-0.1
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-001	ES2313155-002	ES2313155-004	ES2313155-006	ES2313155-008
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		100	----	110	112	100
13C8-PFOA	----	0.0002	%		98.5	----	99.0	95.0	98.0



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05-0.0-0.1	TP06-0.0-0.1	TP07-0.0-0.1	TP07-0.3-0.4	TP08-0.0-0.1
Sampling date / time					19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-010	ES2313155-012	ES2313155-014	ES2313155-015	ES2313155-017
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	-----	1.0	%		19.5	16.4	11.7	10.1	10.7
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres		No	No	No	No	No
Asbestos Type	1332-21-4	-	--		-	-	-	-	-
Synthetic Mineral Fibre	-----	-	--		No	No	No	No	No
Organic Fibre	-----	-	--		No	No	No	No	No
Sample weight (dry)	-----	0.01	g		199	143	126	149	187
APPROVED IDENTIFIER:	-----	-	--		A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		10	12	18	16	16
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		16	22	24	28	27
Copper	7440-50-8	5	mg/kg		27	18	31	18	28
Lead	7439-92-1	5	mg/kg		30	27	40	33	40
Nickel	7440-02-0	2	mg/kg		10	10	11	11	11
Zinc	7440-66-6	5	mg/kg		58	41	76	30	67
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	-----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	-----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP05-0.0-0.1	TP06-0.0-0.1	TP07-0.0-0.1	TP07-0.3-0.4	TP08-0.0-0.1
Sampling date / time				19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-010	ES2313155-012	ES2313155-014	ES2313155-015	ES2313155-017
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05-0.0-0.1	TP06-0.0-0.1	TP07-0.0-0.1	TP07-0.3-0.4	TP08-0.0-0.1
Sampling date / time					19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-010	ES2313155-012	ES2313155-014	ES2313155-015	ES2313155-017
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2

EP080/071: Total Petroleum Hydrocarbons



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP05-0.0-0.1	TP06-0.0-0.1	TP07-0.0-0.1	TP07-0.3-0.4	TP08-0.0-0.1
Sampling date / time				19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-010	ES2313155-012	ES2313155-014	ES2313155-015	ES2313155-017
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
C6 - C9 Fraction	-----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	-----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	-----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	-----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	-----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	-----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	-----	100	mg/kg	<100	<100	110	<100	<100
>C34 - C40 Fraction	-----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	-----	50	mg/kg	<50	<50	110	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	-----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	-----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	-----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0055	0.0006	0.0036	----	0.0040
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	----	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	<0.0002



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05-0.0-0.1	TP06-0.0-0.1	TP07-0.0-0.1	TP07-0.3-0.4	TP08-0.0-0.1
Sampling date / time					19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-010	ES2313155-012	ES2313155-014	ES2313155-015	ES2313155-017
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		0.0008	0.0004	<0.0002	----	0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		0.0055	0.0006	0.0036	----	0.0040
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		0.0063	0.0010	0.0036	----	0.0042
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		127	113	110	92.3	94.0
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		127	118	122	101	114
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		107	104	115	85.5	102
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		78.3	81.6	83.0	73.0	81.5
2-Chlorophenol-D4	93951-73-6	0.5	%		83.6	85.8	86.4	74.6	85.0
2,4,6-Tribromophenol	118-79-6	0.5	%		65.1	65.8	67.9	51.9	64.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		76.0	77.6	77.9	73.6	77.7
Anthracene-d10	1719-06-8	0.5	%		75.8	77.4	77.8	73.6	77.3
4-Terphenyl-d14	1718-51-0	0.5	%		83.4	86.1	85.4	79.7	85.5
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		107	110	113	83.9	92.2
Toluene-D8	2037-26-5	0.2	%		90.8	94.1	93.6	93.7	97.5
4-Bromofluorobenzene	460-00-4	0.2	%		85.4	88.0	90.7	90.6	93.6



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05-0.0-0.1	TP06-0.0-0.1	TP07-0.0-0.1	TP07-0.3-0.4	TP08-0.0-0.1
Sampling date / time					19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-010	ES2313155-012	ES2313155-014	ES2313155-015	ES2313155-017
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		100	102	112	----	99.5
13C8-PFOA	----	0.0002	%		96.5	102	95.5	----	97.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP08-0.4-0.5	TP09-0.0-0.1	TP09-0.5-0.6	TP10-0.0-0.1	TP11-0.0-0.1
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-018	ES2313155-020	ES2313155-021	ES2313155-022	ES2313155-024
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	-----	1.0	%	8.9	17.4	16.1	14.1	10.1
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	----	No	No
Asbestos Type	1332-21-4	-	--	-	-	----	-	-
Synthetic Mineral Fibre	-----	-	--	No	No	----	No	No
Organic Fibre	-----	-	--	No	No	----	No	No
Sample weight (dry)	-----	0.01	g	316	213	----	121	120
APPROVED IDENTIFIER:	-----	-	--	A. SMYLIE	A. SMYLIE	----	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	12	12	14	11	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	22	16	21	16	14
Copper	7440-50-8	5	mg/kg	23	32	33	25	8
Lead	7439-92-1	5	mg/kg	34	29	11	24	11
Nickel	7440-02-0	2	mg/kg	10	14	17	12	8
Zinc	7440-66-6	5	mg/kg	48	82	78	61	18
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	-----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	-----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP08-0.4-0.5	TP09-0.0-0.1	TP09-0.5-0.6	TP10-0.0-0.1	TP11-0.0-0.1
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-018	ES2313155-020	ES2313155-021	ES2313155-022	ES2313155-024
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP08-0.4-0.5	TP09-0.0-0.1	TP09-0.5-0.6	TP10-0.0-0.1	TP11-0.0-0.1
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-018	ES2313155-020	ES2313155-021	ES2313155-022	ES2313155-024
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2

EP080/071: Total Petroleum Hydrocarbons



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP08-0.4-0.5	TP09-0.0-0.1	TP09-0.5-0.6	TP10-0.0-0.1	TP11-0.0-0.1
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-018	ES2313155-020	ES2313155-021	ES2313155-022	ES2313155-024
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	150	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	160	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	310	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	240	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	290	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	<0.0002	----	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	<0.0002	----	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	0.0057	----	0.0004	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	<0.001	----	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	<0.0002	----	<0.0002	<0.0002



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP08-0.4-0.5	TP09-0.0-0.1	TP09-0.5-0.6	TP10-0.0-0.1	TP11-0.0-0.1
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-018	ES2313155-020	ES2313155-021	ES2313155-022	ES2313155-024
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	<0.0002	----	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	<0.0002	----	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	0.0004	----	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	----	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	----	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	<0.0005	----	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	<0.0005	----	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	0.0057	----	0.0004	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	0.0061	----	0.0004	<0.0002
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		93.3	114	92.7	90.6	82.4
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		106	123	87.0	91.0	90.8
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		86.0	111	61.9	86.9	57.5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		70.8	85.3	83.2	82.9	82.6
2-Chlorophenol-D4	93951-73-6	0.5	%		73.3	86.8	87.6	85.8	87.6
2,4,6-Tribromophenol	118-79-6	0.5	%		43.5	71.0	65.0	60.4	59.9
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		77.6	77.7	79.0	77.9	79.8
Anthracene-d10	1719-06-8	0.5	%		77.3	77.2	78.2	77.3	78.9
4-Terphenyl-d14	1718-51-0	0.5	%		85.0	85.0	86.7	85.5	88.2
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		79.0	89.7	90.8	89.8	94.4
Toluene-D8	2037-26-5	0.2	%		83.9	85.6	93.8	93.3	97.2
4-Bromofluorobenzene	460-00-4	0.2	%		83.7	87.2	92.3	90.8	93.4



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP08-0.4-0.5	TP09-0.0-0.1	TP09-0.5-0.6	TP10-0.0-0.1	TP11-0.0-0.1
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-018	ES2313155-020	ES2313155-021	ES2313155-022	ES2313155-024
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	109	----	91.0	94.5
13C8-PFOA	----	0.0002	%		----	92.5	----	106	100



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP11-0.1-0.2	TP12-0.0-0.1	TP13-0.0-0.1	TP13-0.2-0.3	TP14-0.0-0.1
Sampling date / time				19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-025	ES2313155-027	ES2313155-029	ES2313155-030	ES2313155-032
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	5.3	12.7	12.4	10.6	11.2
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	----	No	No	No	No
Asbestos Type	1332-21-4	-	--	----	-	-	-	-
Synthetic Mineral Fibre	----	-	--	----	No	No	No	No
Organic Fibre	----	-	--	----	No	No	No	No
Sample weight (dry)	----	0.01	g	----	222	212	176	238
APPROVED IDENTIFIER:	----	-	--	----	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	15	12	10	11
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	5	22	22	28	20
Copper	7440-50-8	5	mg/kg	<5	16	19	14	21
Lead	7439-92-1	5	mg/kg	8	28	23	20	38
Nickel	7440-02-0	2	mg/kg	2	9	10	8	10
Zinc	7440-66-6	5	mg/kg	17	48	79	41	60
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP11-0.1-0.2	TP12-0.0-0.1	TP13-0.0-0.1	TP13-0.2-0.3	TP14-0.0-0.1
Sampling date / time				19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-025	ES2313155-027	ES2313155-029	ES2313155-030	ES2313155-032
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP11-0.1-0.2	TP12-0.0-0.1	TP13-0.0-0.1	TP13-0.2-0.3	TP14-0.0-0.1
Sampling date / time				19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-025	ES2313155-027	ES2313155-029	ES2313155-030	ES2313155-032
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2

EP080/071: Total Petroleum Hydrocarbons



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP11-0.1-0.2	TP12-0.0-0.1	TP13-0.0-0.1	TP13-0.2-0.3	TP14-0.0-0.1
Sampling date / time					19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-025	ES2313155-027	ES2313155-029	ES2313155-030	ES2313155-032
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	-----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	-----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	-----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	-----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	-----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	-----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	-----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	-----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	<0.0002	----	----	0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	<0.0002	----	----	0.0007
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	0.0005	----	----	0.0004
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	<0.001	----	----	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	<0.0002	----	----	<0.0002



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP11-0.1-0.2	TP12-0.0-0.1	TP13-0.0-0.1	TP13-0.2-0.3	TP14-0.0-0.1
Sampling date / time					19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-025	ES2313155-027	ES2313155-029	ES2313155-030	ES2313155-032
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	<0.0002	----	----	0.0003
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	<0.0002	----	----	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	0.0002	----	----	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	----	----	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	----	----	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	<0.0005	----	----	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	<0.0005	----	----	<0.0005
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	0.0005	----	----	0.0011
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	0.0007	----	----	0.0016
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		88.6	96.0	94.8	73.4	70.4
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		106	107	105	68.0	73.3
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		76.8	73.3	79.8	48.1	49.1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		81.0	84.3	81.2	81.6	81.3
2-Chlorophenol-D4	93951-73-6	0.5	%		85.2	88.6	84.3	83.6	83.6
2,4,6-Tribromophenol	118-79-6	0.5	%		54.4	59.7	84.5	82.1	79.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		77.6	81.0	84.9	85.8	84.8
Anthracene-d10	1719-06-8	0.5	%		77.8	79.7	86.8	86.9	86.2
4-Terphenyl-d14	1718-51-0	0.5	%		86.3	89.7	87.0	87.4	86.4
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		91.7	90.9	94.9	87.5	92.7
Toluene-D8	2037-26-5	0.2	%		96.4	94.8	99.3	75.2	94.1
4-Bromofluorobenzene	460-00-4	0.2	%		93.9	91.4	94.3	78.4	88.2



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP11-0.1-0.2	TP12-0.0-0.1	TP13-0.0-0.1	TP13-0.2-0.3	TP14-0.0-0.1
Sampling date / time					19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-025	ES2313155-027	ES2313155-029	ES2313155-030	ES2313155-032
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	89.5	----	----	90.0
13C8-PFOA	----	0.0002	%		----	101	----	----	104



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP14-0.3-0.4	TP15-0.0-0.1	TP15-0.3-0.4	TP16-0.0-0.1	TP16-0.2-0.3
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-033	ES2313155-034	ES2313155-035	ES2313155-037	ES2313155-038
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	36.6	13.3	13.4	16.0	13.7
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	No	No	----
Asbestos (Trace)	1332-21-4	5	Fibres	----	No	No	No	----
Asbestos Type	1332-21-4	-	--	----	-	-	-	----
Synthetic Mineral Fibre	----	-	--	----	No	No	No	----
Organic Fibre	----	-	--	----	No	No	No	----
Sample weight (dry)	----	0.01	g	----	167	126	138	----
APPROVED IDENTIFIER:	----	-	--	----	A. SMYLIE	A. SMYLIE	A. SMYLIE	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	8	5	10	15	13
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	11	18	22	17
Copper	7440-50-8	5	mg/kg	23	14	21	20	25
Lead	7439-92-1	5	mg/kg	13	13	22	30	16
Nickel	7440-02-0	2	mg/kg	9	7	10	11	11
Zinc	7440-66-6	5	mg/kg	52	40	53	50	52
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP14-0.3-0.4	TP15-0.0-0.1	TP15-0.3-0.4	TP16-0.0-0.1	TP16-0.2-0.3
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-033	ES2313155-034	ES2313155-035	ES2313155-037	ES2313155-038
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP14-0.3-0.4	TP15-0.0-0.1	TP15-0.3-0.4	TP16-0.0-0.1	TP16-0.2-0.3
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-033	ES2313155-034	ES2313155-035	ES2313155-037	ES2313155-038
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2

EP080/071: Total Petroleum Hydrocarbons



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP14-0.3-0.4	TP15-0.0-0.1	TP15-0.3-0.4	TP16-0.0-0.1	TP16-0.2-0.3
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-033	ES2313155-034	ES2313155-035	ES2313155-037	ES2313155-038
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
C6 - C9 Fraction	-----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	-----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	-----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	-----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	-----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	-----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	-----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	-----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	-----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	-----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	-----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	-----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	----	<0.0002	----	<0.0002	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	----	<0.0002	----	<0.0002	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	----	0.0021	----	0.0006	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	----	<0.001	----	<0.001	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	----	<0.0002	----	<0.0002	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP14-0.3-0.4	TP15-0.0-0.1	TP15-0.3-0.4	TP16-0.0-0.1	TP16-0.2-0.3
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-033	ES2313155-034	ES2313155-035	ES2313155-037	ES2313155-038
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	<0.0002	----	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	<0.0005	----	<0.0005	----
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	0.0021	----	0.0006	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	0.0021	----	0.0006	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		89.4	103	104	95.3	105
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		110	108	111	96.7	98.9
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		104	103	103	91.1	93.1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		84.2	80.1	79.6	76.4	80.5
2-Chlorophenol-D4	93951-73-6	0.5	%		84.1	80.6	81.0	76.6	81.2
2,4,6-Tribromophenol	118-79-6	0.5	%		69.9	68.3	68.0	54.9	67.4
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		85.0	83.6	83.2	71.0	84.7
Anthracene-d10	1719-06-8	0.5	%		86.7	85.4	85.7	76.9	85.6
4-Terphenyl-d14	1718-51-0	0.5	%		89.6	86.7	85.8	68.4	87.2
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		90.9	95.0	100	104	98.9
Toluene-D8	2037-26-5	0.2	%		96.0	97.5	93.1	97.2	94.8
4-Bromofluorobenzene	460-00-4	0.2	%		92.4	94.4	90.2	94.0	93.4



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP14-0.3-0.4	TP15-0.0-0.1	TP15-0.3-0.4	TP16-0.0-0.1	TP16-0.2-0.3
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-033	ES2313155-034	ES2313155-035	ES2313155-037	ES2313155-038
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	102	----	98.5	----
13C8-PFOA	----	0.0002	%		----	99.0	----	98.5	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP17-0.0-0.1	TP18-0.0-0.1	TP19-0.0-0.1	TP19-0.3-0.4	TP20-0.0-0.1
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-040	ES2313155-042	ES2313155-044	ES2313155-045	ES2313155-047
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	-----	1.0	%	29.9	21.6	----	20.4	15.0
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	----	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	----	No
Asbestos Type	1332-21-4	-	--	-	-	-	----	-
Synthetic Mineral Fibre	-----	-	--	No	No	No	----	No
Organic Fibre	-----	-	--	No	No	No	----	No
Sample weight (dry)	-----	0.01	g	182	282	150	----	223
APPROVED IDENTIFIER:	-----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	----	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	12	11	----	12	12
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	<1	<1
Chromium	7440-47-3	2	mg/kg	16	16	----	20	16
Copper	7440-50-8	5	mg/kg	18	20	----	16	19
Lead	7439-92-1	5	mg/kg	27	27	----	14	24
Nickel	7440-02-0	2	mg/kg	9	11	----	8	8
Zinc	7440-66-6	5	mg/kg	43	53	----	28	97
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	-----	0.1	mg/kg	<0.1	<0.1	----	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
^ Total Chlordane (sum)	-----	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP17-0.0-0.1	TP18-0.0-0.1	TP19-0.0-0.1	TP19-0.3-0.4	TP20-0.0-0.1
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-040	ES2313155-042	ES2313155-044	ES2313155-045	ES2313155-047
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP17-0.0-0.1	TP18-0.0-0.1	TP19-0.0-0.1	TP19-0.3-0.4	TP20-0.0-0.1
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-040	ES2313155-042	ES2313155-044	ES2313155-045	ES2313155-047
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	----	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	----	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	----	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	----	1.2	1.2

EP080/071: Total Petroleum Hydrocarbons



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP17-0.0-0.1	TP18-0.0-0.1	TP19-0.0-0.1	TP19-0.3-0.4	TP20-0.0-0.1
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-040	ES2313155-042	ES2313155-044	ES2313155-045	ES2313155-047
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	-----	10	mg/kg		<10	<10	----	<10	<10
C10 - C14 Fraction	-----	50	mg/kg		<50	<50	----	<50	<50
C15 - C28 Fraction	-----	100	mg/kg		<100	<100	----	<100	<100
C29 - C36 Fraction	-----	100	mg/kg		<100	<100	----	<100	<100
^ C10 - C36 Fraction (sum)	-----	50	mg/kg		<50	<50	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	<10	<10
>C10 - C16 Fraction	-----	50	mg/kg		<50	<50	----	<50	<50
>C16 - C34 Fraction	-----	100	mg/kg		<100	<100	----	<100	<100
>C34 - C40 Fraction	-----	100	mg/kg		<100	<100	----	<100	<100
^ >C10 - C40 Fraction (sum)	-----	50	mg/kg		<50	<50	----	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	-----	50	mg/kg		<50	<50	----	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
^ Sum of BTEX	-----	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
^ Total Xylenes	-----	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	0.0003
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	0.0022	----	0.0054
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		0.0011	0.0006	0.0334	----	0.167
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	----	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	0.0004



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP17-0.0-0.1	TP18-0.0-0.1	TP19-0.0-0.1	TP19-0.3-0.4	TP20-0.0-0.1
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-040	ES2313155-042	ES2313155-044	ES2313155-045	ES2313155-047
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	0.0008
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	0.0003
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		0.0004	<0.0002	0.0002	----	0.0019
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	<0.0005
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		0.0011	0.0006	0.0356	----	0.172
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		0.0015	0.0006	0.0358	----	0.176
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		106	103	----	103	127
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		103	82.1	----	136	136
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		89.5	75.6	----	123	124
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		81.6	75.9	----	77.7	80.9
2-Chlorophenol-D4	93951-73-6	0.5	%		82.7	77.3	----	78.6	81.1
2,4,6-Tribromophenol	118-79-6	0.5	%		67.8	63.5	----	65.7	67.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		83.4	79.6	----	82.0	83.3
Anthracene-d10	1719-06-8	0.5	%		84.0	79.8	----	82.4	84.9
4-Terphenyl-d14	1718-51-0	0.5	%		85.0	81.3	----	83.9	85.1
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		93.9	112	----	96.1	92.2
Toluene-D8	2037-26-5	0.2	%		86.2	90.2	----	74.6	90.8
4-Bromofluorobenzene	460-00-4	0.2	%		84.1	93.8	----	87.1	90.9



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP17-0.0-0.1	TP18-0.0-0.1	TP19-0.0-0.1	TP19-0.3-0.4	TP20-0.0-0.1
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-040	ES2313155-042	ES2313155-044	ES2313155-045	ES2313155-047
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		102	88.5	93.0	----	97.0
13C8-PFOA	----	0.0002	%		98.5	100	102	----	100



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP21-0.0-0.1	TP22-0.0-0.1	TP22-0.2-0.3	TP23-0.0-0.1	TP24-0.0-0.1
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-049	ES2313155-052	ES2313155-053	ES2313155-055	ES2313155-057
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	-----	1.0	%	10.8	23.6	22.6	21.5	18.5
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	----	No	No
Asbestos Type	1332-21-4	-	--	-	-	----	-	-
Synthetic Mineral Fibre	-----	-	--	No	No	----	No	No
Organic Fibre	-----	-	--	No	No	----	No	No
Sample weight (dry)	-----	0.01	g	243	183	----	178	191
APPROVED IDENTIFIER:	-----	-	--	A. SMYLLIE	A. SMYLLIE	----	A. SMYLLIE	A. SMYLLIE
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	14	13	13	14
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	12	19	19	21	23
Copper	7440-50-8	5	mg/kg	14	24	24	21	14
Lead	7439-92-1	5	mg/kg	21	33	22	34	17
Nickel	7440-02-0	2	mg/kg	7	10	11	11	6
Zinc	7440-66-6	5	mg/kg	48	56	52	80	24
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	<20	----	----	----	<20
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg	0.2	----	----	----	0.6
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N (Sol.)	14797-55-8	0.1	mg/kg	1.0	----	----	----	0.4
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	-----	0.1	mg/kg	1.2	----	----	----	1.0
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	-----	20	mg/kg	2160	----	----	----	990
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	-----	20	mg/kg	2160	----	----	----	990
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	-----	2	mg/kg	573	----	----	----	178



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP21-0.0-0.1	TP22-0.0-0.1	TP22-0.2-0.3	TP23-0.0-0.1	TP24-0.0-0.1
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-049	ES2313155-052	ES2313155-053	ES2313155-055	ES2313155-057
					Result	Result	Result	Result	Result
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.1	mg/kg		1.0	----	----	----	1.0
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP21-0.0-0.1	TP22-0.0-0.1	TP22-0.2-0.3	TP23-0.0-0.1	TP24-0.0-0.1
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-049	ES2313155-052	ES2313155-053	ES2313155-055	ES2313155-057
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP21-0.0-0.1	TP22-0.0-0.1	TP22-0.2-0.3	TP23-0.0-0.1	TP24-0.0-0.1
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-049	ES2313155-052	ES2313155-053	ES2313155-055	ES2313155-057
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP21-0.0-0.1	TP22-0.0-0.1	TP22-0.2-0.3	TP23-0.0-0.1	TP24-0.0-0.1
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-049	ES2313155-052	ES2313155-053	ES2313155-055	ES2313155-057
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		0.0002	<0.0002	----	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		0.0012	<0.0002	----	<0.0002	0.0028
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		0.0050	0.0008	----	0.0006	0.0061
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	----	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		0.0003	<0.0002	----	<0.0002	0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		0.0010	<0.0002	----	<0.0002	0.0006
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		0.0003	<0.0002	----	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		0.0007	0.0002	----	0.0002	0.0010
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	----	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		0.0062	0.0008	----	0.0006	0.0089
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		0.0087	0.0010	----	0.0008	0.0107
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		125	93.0	102	114	119



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP21-0.0-0.1	TP22-0.0-0.1	TP22-0.2-0.3	TP23-0.0-0.1	TP24-0.0-0.1
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-049	ES2313155-052	ES2313155-053	ES2313155-055	ES2313155-057
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate - Continued									
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		120	130	94.2	141	117
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		110	119	79.6	116	89.9
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		81.4	80.6	78.2	81.0	76.5
2-Chlorophenol-D4	93951-73-6	0.5	%		82.3	82.0	79.4	82.3	77.9
2,4,6-Tribromophenol	118-79-6	0.5	%		72.6	70.0	66.7	69.6	64.9
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		85.8	82.4	80.3	82.4	80.4
Anthracene-d10	1719-06-8	0.5	%		88.0	83.5	82.3	85.2	81.9
4-Terphenyl-d14	1718-51-0	0.5	%		88.1	84.3	82.4	85.4	82.6
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		99.0	85.0	86.0	81.6	83.8
Toluene-D8	2037-26-5	0.2	%		88.0	82.1	83.8	78.4	80.8
4-Bromofluorobenzene	460-00-4	0.2	%		90.0	86.4	85.0	79.8	79.8
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		90.5	99.0	----	91.0	102
13C8-PFOA	----	0.0002	%		101	98.0	----	99.0	98.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP25-0.0-0.1	HA01-0.0-0.1	HA02-0.0-0.1	HA03-0.1-0.2	HA04-0.1-0.2
Sampling date / time				19-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-059	ES2313155-061	ES2313155-063	ES2313155-066	ES2313155-068
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	13.3	14.5	13.3	11.5	12.5
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Synthetic Mineral Fibre	----	-	--	No	No	No	No	No
Organic Fibre	----	-	--	No	No	No	No	No
Sample weight (dry)	----	0.01	g	143	91.9	85.1	118	148
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	15	<5	<5	8	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	25	6	11	21	13
Copper	7440-50-8	5	mg/kg	29	<5	14	16	18
Lead	7439-92-1	5	mg/kg	39	6	14	30	39
Nickel	7440-02-0	2	mg/kg	7	3	6	6	7
Zinc	7440-66-6	5	mg/kg	38	13	45	75	112
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	<20	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg	0.2	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N (Sol.)	14797-55-8	0.1	mg/kg	3.6	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	3.8	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	20	mg/kg	1770	----	----	----	----
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	----	20	mg/kg	1770	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	2	mg/kg	531	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP25-0.0-0.1	HA01-0.0-0.1	HA02-0.0-0.1	HA03-0.1-0.2	HA04-0.1-0.2
Sampling date / time					19-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-059	ES2313155-061	ES2313155-063	ES2313155-066	ES2313155-068
					Result	Result	Result	Result	Result
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.1	mg/kg		3.0	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	0.31	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	0.12	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	0.19	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP25-0.0-0.1	HA01-0.0-0.1	HA02-0.0-0.1	HA03-0.1-0.2	HA04-0.1-0.2
Sampling date / time				19-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-059	ES2313155-061	ES2313155-063	ES2313155-066	ES2313155-068
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP25-0.0-0.1	HA01-0.0-0.1	HA02-0.0-0.1	HA03-0.1-0.2	HA04-0.1-0.2
Sampling date / time					19-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-059	ES2313155-061	ES2313155-063	ES2313155-066	ES2313155-068
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP25-0.0-0.1	HA01-0.0-0.1	HA02-0.0-0.1	HA03-0.1-0.2	HA04-0.1-0.2
Sampling date / time				19-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-059	ES2313155-061	ES2313155-063	ES2313155-066	ES2313155-068
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0008	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0019	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0005	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0008	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0006	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	----	----	----	----
EP231P: PFAS Sums								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0027	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0048	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	127	119	99.9	97.4	97.9



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP25-0.0-0.1	HA01-0.0-0.1	HA02-0.0-0.1	HA03-0.1-0.2	HA04-0.1-0.2
Sampling date / time					19-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-059	ES2313155-061	ES2313155-063	ES2313155-066	ES2313155-068
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate - Continued									
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		131	147	78.2	100	104
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		120	135	77.3	88.1	93.1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		81.0	77.3	80.0	77.9	78.1
2-Chlorophenol-D4	93951-73-6	0.5	%		81.7	78.2	81.6	79.1	79.4
2,4,6-Tribromophenol	118-79-6	0.5	%		69.1	66.0	72.9	71.1	70.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		82.3	80.9	81.8	82.3	80.2
Anthracene-d10	1719-06-8	0.5	%		83.3	81.6	83.3	83.8	81.0
4-Terphenyl-d14	1718-51-0	0.5	%		84.0	83.0	83.9	83.8	81.6
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		93.1	81.3	94.6	87.1	95.2
Toluene-D8	2037-26-5	0.2	%		93.4	75.2	94.2	87.2	99.5
4-Bromofluorobenzene	460-00-4	0.2	%		88.5	80.3	91.1	85.0	92.7
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		99.0	----	----	----	----
13C8-PFOA	----	0.0002	%		100	----	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				HA05-0.2-0.3	HA06-0.2-0.3	HA07-0.0-0.1	HA08-0.1-0.2	HA09-0.1-0.2
Sampling date / time				20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-070	ES2313155-071	ES2313155-073	ES2313155-075	ES2313155-077
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	18.4	6.3	20.8	7.0	7.7
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Synthetic Mineral Fibre	----	-	--	No	No	No	No	No
Organic Fibre	----	-	--	No	No	No	No	No
Sample weight (dry)	----	0.01	g	102	106	40.6	122	139
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	9	6	6	5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	10	14	12	13
Copper	7440-50-8	5	mg/kg	10	9	27	13	11
Lead	7439-92-1	5	mg/kg	39	13	28	24	21
Nickel	7440-02-0	2	mg/kg	5	4	9	5	6
Zinc	7440-66-6	5	mg/kg	52	22	109	46	66
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	----	----	----	----	<20
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg	----	----	----	----	<0.1
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N (Sol.)	14797-55-8	0.1	mg/kg	----	----	----	----	8.0
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	----	----	----	----	8.0
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	20	mg/kg	----	----	----	----	730
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	----	20	mg/kg	----	----	----	----	740
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	2	mg/kg	----	----	----	----	190



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	HA05-0.2-0.3	HA06-0.2-0.3	HA07-0.0-0.1	HA08-0.1-0.2	HA09-0.1-0.2
Sampling date / time					20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-070	ES2313155-071	ES2313155-073	ES2313155-075	ES2313155-077
					Result	Result	Result	Result	Result
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.1	mg/kg		----	----	----	----	0.3
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				HA05-0.2-0.3	HA06-0.2-0.3	HA07-0.0-0.1	HA08-0.1-0.2	HA09-0.1-0.2
Sampling date / time				20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-070	ES2313155-071	ES2313155-073	ES2313155-075	ES2313155-077
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	HA05-0.2-0.3	HA06-0.2-0.3	HA07-0.0-0.1	HA08-0.1-0.2	HA09-0.1-0.2
Sampling date / time					20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-070	ES2313155-071	ES2313155-073	ES2313155-075	ES2313155-077
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	140	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	240	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	180	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	140	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	320	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				HA05-0.2-0.3	HA06-0.2-0.3	HA07-0.0-0.1	HA08-0.1-0.2	HA09-0.1-0.2
Sampling date / time				20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-070	ES2313155-071	ES2313155-073	ES2313155-075	ES2313155-077
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	108	82.3	95.6	106	97.9
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	92.8	89.1	116	134	120
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	78.1	63.4	100	128	90.8
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	77.7	76.7	77.5	79.3	77.6
2-Chlorophenol-D4	93951-73-6	0.5	%	79.3	78.3	79.6	81.4	79.9
2,4,6-Tribromophenol	118-79-6	0.5	%	70.8	74.7	74.6	80.3	75.2
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	82.4	82.0	80.2	83.6	80.7
Anthracene-d10	1719-06-8	0.5	%	84.7	83.2	81.6	85.4	81.9
4-Terphenyl-d14	1718-51-0	0.5	%	84.4	83.8	81.0	84.9	81.6
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	87.6	99.9	91.9	98.6	100
Toluene-D8	2037-26-5	0.2	%	88.2	98.4	92.4	96.4	99.0
4-Bromofluorobenzene	460-00-4	0.2	%	84.2	101	96.7	99.1	99.8



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				HA10-0.0-0.1	HA10-0.2-0.3	HA11-0.1-0.2	HA12-0.1-0.2	HA13-0.1-0.2
Sampling date / time				20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-079	ES2313155-080	ES2313155-082	ES2313155-084	ES2313155-085
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	10.1	9.1	16.2	7.4	11.0
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	----	No	No	No
Asbestos Type	1332-21-4	-	--	-	----	-	-	-
Synthetic Mineral Fibre	----	-	--	No	----	No	No	No
Organic Fibre	----	-	--	No	----	No	No	No
Sample weight (dry)	----	0.01	g	80.8	----	107	90.9	85.4
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	----	A. SMYLIE	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	10	11	11
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	6	32	20	18	19
Copper	7440-50-8	5	mg/kg	24	59	32	22	28
Lead	7439-92-1	5	mg/kg	12	<5	29	29	41
Nickel	7440-02-0	2	mg/kg	7	171	12	15	16
Zinc	7440-66-6	5	mg/kg	26	57	80	91	78
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	----	----	----	<20	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg	----	----	----	0.1	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N (Sol.)	14797-55-8	0.1	mg/kg	----	----	----	2.3	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	----	----	----	2.4	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	20	mg/kg	----	----	----	1350	----
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	----	20	mg/kg	----	----	----	1350	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	2	mg/kg	----	----	----	305	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	HA10-0.0-0.1	HA10-0.2-0.3	HA11-0.1-0.2	HA12-0.1-0.2	HA13-0.1-0.2
Sampling date / time					20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-079	ES2313155-080	ES2313155-082	ES2313155-084	ES2313155-085
					Result	Result	Result	Result	Result
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.1	mg/kg		----	----	----	1.1	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				HA10-0.0-0.1	HA10-0.2-0.3	HA11-0.1-0.2	HA12-0.1-0.2	HA13-0.1-0.2
Sampling date / time				20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-079	ES2313155-080	ES2313155-082	ES2313155-084	ES2313155-085
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	HA10-0.0-0.1	HA10-0.2-0.3	HA11-0.1-0.2	HA12-0.1-0.2	HA13-0.1-0.2
Sampling date / time					20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-079	ES2313155-080	ES2313155-082	ES2313155-084	ES2313155-085
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	110	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	140	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	250	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	190	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	290	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				HA10-0.0-0.1	HA10-0.2-0.3	HA11-0.1-0.2	HA12-0.1-0.2	HA13-0.1-0.2
Sampling date / time				20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-079	ES2313155-080	ES2313155-082	ES2313155-084	ES2313155-085
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	122	104	114	122	105
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	138	107	115	92.9	124
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	111	78.3	85.3	140	98.8
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	77.4	77.4	78.3	80.4	83.3
2-Chlorophenol-D4	93951-73-6	0.5	%	79.8	79.2	80.3	83.0	85.1
2,4,6-Tribromophenol	118-79-6	0.5	%	75.7	72.8	82.2	81.3	81.1
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	81.4	81.1	82.0	84.2	86.4
Anthracene-d10	1719-06-8	0.5	%	82.4	82.8	83.4	85.3	88.7
4-Terphenyl-d14	1718-51-0	0.5	%	82.4	81.6	83.4	85.1	88.2
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	95.9	97.6	94.8	92.3	91.1
Toluene-D8	2037-26-5	0.2	%	93.8	96.4	92.3	92.4	91.5
4-Bromofluorobenzene	460-00-4	0.2	%	96.4	99.9	95.6	97.0	92.7



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	HA14-0.1-0.2	HA15-0.1-0.2	TP08-A-0.5-0.6	TP08-B-0.1-0.2	TP08-C-0.1-0.2
Sampling date / time					20-Apr-2023 00:00	20-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-087	ES2313155-088	ES2313155-092	ES2313155-094	ES2313155-096
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	-----	1.0	%		12.2	10.3	19.1	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres		No	No	No	No	No
Asbestos Type	1332-21-4	-	--		-	-	-	-	-
Synthetic Mineral Fibre	-----	-	--		No	No	No	No	No
Organic Fibre	-----	-	--		No	No	No	No	No
Sample weight (dry)	-----	0.01	g		52.6	102	718	563	680
APPROVED IDENTIFIER:	-----	-	--		A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		12	10	<5	----	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg		14	18	<2	----	----
Copper	7440-50-8	5	mg/kg		30	19	<5	----	----
Lead	7439-92-1	5	mg/kg		58	21	<5	----	----
Nickel	7440-02-0	2	mg/kg		14	7	<2	----	----
Zinc	7440-66-6	5	mg/kg		177	36	6	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	-----	0.1	mg/kg		<0.1	<0.1	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
^ Total Chlordane (sum)	-----	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				HA14-0.1-0.2	HA15-0.1-0.2	TP08-A-0.5-0.6	TP08-B-0.1-0.2	TP08-C-0.1-0.2
Sampling date / time				20-Apr-2023 00:00	20-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-087	ES2313155-088	ES2313155-092	ES2313155-094	ES2313155-096
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				HA14-0.1-0.2	HA15-0.1-0.2	TP08-A-0.5-0.6	TP08-B-0.1-0.2	TP08-C-0.1-0.2
Sampling date / time				20-Apr-2023 00:00	20-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-087	ES2313155-088	ES2313155-092	ES2313155-094	ES2313155-096
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	----	----

EP080/071: Total Petroleum Hydrocarbons



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	HA14-0.1-0.2	HA15-0.1-0.2	TP08-A-0.5-0.6	TP08-B-0.1-0.2	TP08-C-0.1-0.2
Sampling date / time					20-Apr-2023 00:00	20-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-087	ES2313155-088	ES2313155-092	ES2313155-094	ES2313155-096
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		0.0021	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	HA14-0.1-0.2	HA15-0.1-0.2	TP08-A-0.5-0.6	TP08-B-0.1-0.2	TP08-C-0.1-0.2
Sampling date / time					20-Apr-2023 00:00	20-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-087	ES2313155-088	ES2313155-092	ES2313155-094	ES2313155-096
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		0.0021	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		0.0021	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		130	119	119	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		139	118	109	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		121	105	94.2	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		81.1	79.1	79.9	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		83.1	81.8	81.8	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%		78.2	76.8	73.9	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		85.4	83.7	83.5	----	----
Anthracene-d10	1719-06-8	0.5	%		88.1	84.6	85.7	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		87.1	84.6	86.8	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		97.0	90.9	90.3	----	----
Toluene-D8	2037-26-5	0.2	%		96.0	91.5	89.2	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		102	97.8	93.2	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	HA14-0.1-0.2	HA15-0.1-0.2	TP08-A-0.5-0.6	TP08-B-0.1-0.2	TP08-C-0.1-0.2
Sampling date / time					20-Apr-2023 00:00	20-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-087	ES2313155-088	ES2313155-092	ES2313155-094	ES2313155-096
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		102	----	----	----	----
13C8-PFOA	----	0.0002	%		98.5	----	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP08-C-0.4-0.5	TP08-D-0.1-0.2	DUP01	DUP02	Trip Spike - 17
Sampling date / time				19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	11-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-097	ES2313155-099	ES2313155-101	ES2313155-102	ES2313155-110
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	12.2	----	32.6	21.8	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	----	No	----	----	----
Asbestos Type	1332-21-4	-	--	----	-	----	----	----
Synthetic Mineral Fibre	----	-	--	----	No	----	----	----
Organic Fibre	----	-	--	----	No	----	----	----
Sample weight (dry)	----	0.01	g	----	763	----	----	----
APPROVED IDENTIFIER:	----	-	--	----	A. SMYLLIE	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	14	----	8	14	----
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	<1	----
Chromium	7440-47-3	2	mg/kg	24	----	12	19	----
Copper	7440-50-8	5	mg/kg	16	----	20	24	----
Lead	7439-92-1	5	mg/kg	33	----	23	38	----
Nickel	7440-02-0	2	mg/kg	10	----	6	10	----
Zinc	7440-66-6	5	mg/kg	37	----	107	61	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	<0.1	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	<0.1	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP08-C-0.4-0.5	TP08-D-0.1-0.2	DUP01	DUP02	Trip Spike - 17
Sampling date / time				19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	11-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-097	ES2313155-099	ES2313155-101	ES2313155-102	ES2313155-110
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	<0.2	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	<0.2	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	<0.2	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	<0.2	<0.2	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	<0.2	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	<0.05	<0.05	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP08-C-0.4-0.5	TP08-D-0.1-0.2	DUP01	DUP02	Trip Spike - 17
Sampling date / time				19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	11-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-097	ES2313155-099	ES2313155-101	ES2313155-102	ES2313155-110
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	<1	<1	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	----	<2	<2	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	----	0.6	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	1.2	1.2	----

EP080/071: Total Petroleum Hydrocarbons



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP08-C-0.4-0.5	TP08-D-0.1-0.2	DUP01	DUP02	Trip Spike - 17
Sampling date / time				19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	11-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2313155-097	ES2313155-099	ES2313155-101	ES2313155-102	ES2313155-110
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	<50	<50	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	0.6
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	1.4
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	1.6
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	0.7
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	<0.2	<0.2	4.3
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	<0.5	<0.5	2.3
Naphthalene	91-20-3	1	mg/kg	<1	----	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	----	----	0.0003	<0.0002	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	----	----	0.0057	<0.0002	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	----	----	0.206	0.0009	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	----	----	<0.001	<0.001	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	----	----	0.0005	<0.0002	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP08-C-0.4-0.5	TP08-D-0.1-0.2	DUP01	DUP02	Trip Spike - 17
Sampling date / time					19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	11-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-097	ES2313155-099	ES2313155-101	ES2313155-102	ES2313155-110
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	----	0.0010	<0.0002	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	----	0.0003	<0.0002	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	----	0.0020	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	----	<0.0005	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	----	<0.0005	<0.0005	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	----	<0.0005	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	----	<0.0005	<0.0005	----
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	----	0.212	0.0009	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	----	0.216	0.0009	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		119	----	119	79.3	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		140	----	121	69.2	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		117	----	103	61.6	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		74.5	----	79.4	74.3	----
2-Chlorophenol-D4	93951-73-6	0.5	%		76.0	----	80.9	75.6	----
2,4,6-Tribromophenol	118-79-6	0.5	%		63.2	----	74.8	72.1	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		81.8	----	83.6	80.3	----
Anthracene-d10	1719-06-8	0.5	%		82.9	----	86.2	82.1	----
4-Terphenyl-d14	1718-51-0	0.5	%		83.5	----	86.2	82.5	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		92.2	----	85.4	92.9	102
Toluene-D8	2037-26-5	0.2	%		90.1	----	84.5	91.5	78.8
4-Bromofluorobenzene	460-00-4	0.2	%		96.2	----	87.2	92.4	84.6



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP08-C-0.4-0.5	TP08-D-0.1-0.2	DUP01	DUP02	Trip Spike - 17
Sampling date / time					19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	11-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2313155-097	ES2313155-099	ES2313155-101	ES2313155-102	ES2313155-110
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	----	100	103	----
13C8-PFOA	----	0.0002	%		----	----	98.5	96.0	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Trip Blank	Trip Spike Control - 17	----	----	----
Sampling date / time					11-Apr-2023 00:00	11-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2313155-111	ES2313155-113	-----	-----	-----
					Result	Result	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
[^] C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	0.8	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	1.7	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	2.0	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	0.9	----	----	----
[^] Sum of BTEX	----	0.2	mg/kg		<0.2	5.4	----	----	----
[^] Total Xylenes	----	0.5	mg/kg		<0.5	2.9	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		109	100	----	----	----
Toluene-D8	2037-26-5	0.2	%		81.4	79.6	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		89.4	85.7	----	----	----



Analytical Results

Sub-Matrix: SOLID (Matrix: SOLID)				Sample ID	TP08-A-FC01	----	----	----	----
Sampling date / time					19-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2313155-090	-----	-----	-----	-----
Result						----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples									
Asbestos Detected	1332-21-4	0.1	g/kg		Yes	----	----	----	----
Asbestos Type	1332-21-4	-	--		Ch	----	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		N/A	----	----	----	----
Sample weight (dry)	----	0.01	g		17.9	----	----	----	----
Synthetic Mineral Fibre	----	-	-		No	----	----	----	----
Organic Fibre	----	-	-		Yes	----	----	----	----
APPROVED IDENTIFIER:	----	-	--		B.SCHRADER	----	----	----	----



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Sample ID

				Rinsate 2	----	----	----	----
Sampling date / time				20-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2313155-112	-----	-----	-----	-----
				Result	----	----	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
^ Total Polychlorinated biphenyls	----	1	µg/L	<1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	----	----	----	----
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	----	----	----	----
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	----	----	----	----
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	----	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate 2	----	----	----	----
Sampling date / time					20-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2313155-112	-----	-----	-----	-----
					Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.5	µg/L		<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	----	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L		<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	----	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	----	----	----	----
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	----	----	----	----
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	----	----	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	----	----	----	----
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	----	----	----	----
2,4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	----	----	----	----
2,4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	----	----	----	----
2,6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	----	----	----	----
2,4,6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	----	----	----	----



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Sample ID

				Rinsate 2	----	----	----	----
Sampling date / time				20-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2313155-112	-----	-----	-----	-----
				Result	----	----	----	----
EP075(SIM)A: Phenolic Compounds - Continued								
2,4,5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	----	----	----	----
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate 2	----	----	----	----
Sampling date / time					20-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2313155-112	-----	-----	-----	-----
					Result	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C40 Fraction (sum)		100	µg/L		<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)		100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ Total Xylenes		2	µg/L		<2	----	----	----	----
^ Sum of BTEX		1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		90.0	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		70.4	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		71.6	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		15.7	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		37.5	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%		49.5	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		54.4	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		60.3	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		62.8	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		103	----	----	----	----
Toluene-D8	2037-26-5	2	%		107	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		99.6	----	----	----	----



Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	TP01-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP02-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP03-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP04-0.0-0.1 - 19-Apr-2023 00:00	Soil sample.
EA200: Description	TP05-0.0-0.1 - 19-Apr-2023 00:00	Soil sample.
EA200: Description	TP06-0.0-0.1 - 19-Apr-2023 00:00	Soil sample.
EA200: Description	TP07-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP07-0.3-0.4 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP08-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP08-0.4-0.5 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP09-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP10-0.0-0.1 - 19-Apr-2023 00:00	Soil sample.
EA200: Description	TP11-0.0-0.1 - 19-Apr-2023 00:00	Soil sample.
EA200: Description	TP12-0.0-0.1 - 19-Apr-2023 00:00	Soil sample.
EA200: Description	TP13-0.0-0.1 - 19-Apr-2023 00:00	Soil sample.
EA200: Description	TP13-0.2-0.3 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP14-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP15-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP15-0.3-0.4 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP16-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP17-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP18-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP19-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP20-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP21-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP22-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP23-0.0-0.1 - 18-Apr-2023 00:00	Soil sample.
EA200: Description	TP24-0.0-0.1 - 19-Apr-2023 00:00	Soil sample.
EA200: Description	TP25-0.0-0.1 - 19-Apr-2023 00:00	Soil sample.
EA200: Description	HA01-0.0-0.1 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	HA02-0.0-0.1 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	HA03-0.1-0.2 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	HA04-0.1-0.2 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	HA05-0.2-0.3 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	HA06-0.2-0.3 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	HA07-0.0-0.1 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	HA08-0.1-0.2 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	HA09-0.1-0.2 - 20-Apr-2023 00:00	Soil sample.



Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: Description	HA10-0.0-0.1 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	HA11-0.1-0.2 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	HA12-0.1-0.2 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	HA13-0.1-0.2 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	HA14-0.1-0.2 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	HA15-0.1-0.2 - 20-Apr-2023 00:00	Soil sample.
EA200: Description	TP08-A-0.5-0.6 - 19-Apr-2023 00:00	Soil sample.
EA200: Description	TP08-B-0.1-0.2 - 19-Apr-2023 00:00	Soil sample.
EA200: Description	TP08-C-0.1-0.2 - 19-Apr-2023 00:00	Soil sample.
EA200: Description	TP08-D-0.1-0.2 - 19-Apr-2023 00:00	Soil sample.

Sub-Matrix: **SOLID**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	TP08-A-FC01 - 19-Apr-2023 00:00	Several pieces of degraded asbestos fibre board approximately 80x25x5mm.



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	45	134
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2,4,6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112

Page : 83 of 83
Work Order : ES2313155
Client : SMEC AUSTRALIA PTY LTD
Project : SINSW - Austral PS



Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOLID) EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils



QUALITY CONTROL REPORT

Work Order : **ES2313155**

Client : **SMEC AUSTRALIA PTY LTD**

Contact : **SAM VAUGHAN**

Address : **Level 5, 20 Berry Street, North Sydney, NSW 2060**
North Sydney 2060

Telephone : **----**

Project : **SINSW - Austral PS**

Order number : **SINSW AUST 30018043 210.1 BATCH 1 of 1**

C-O-C number : **----**

Sampler : **HARRISON WOOD**

Site : **----**

Quote number : **EN/025/21**

No. of samples received : **115**

No. of samples analysed : **64**

Page : **1 of 45**

Laboratory : **Environmental Division Sydney**

Contact : **Katie Davis**

Address : **277-289 Woodpark Road Smithfield NSW Australia 2164**

Telephone : **+61-2-8784 8555**

Date Samples Received : **20-Apr-2023**

Date Analysis Commenced : **24-Apr-2023**

Issue Date : **28-Apr-2023**



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Alana Smylie	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5009203)									
ES2312897-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	20	18	8.1	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5011949)									
ES2313155-001	TP01-0.0-0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	3	4	37.3	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	2	3	50.2	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	6	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	6	14	74.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	12	20	52.5	No Limit
ES2313155-018	TP08-0.4-0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	22	15	35.5	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	10	8	23.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	12	8	40.8	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	23	14	49.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	34	18	58.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	48	33	36.7	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5011951)									
ES2313155-033	TP14-0.3-0.4	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5011951) - continued									
ES2313155-033	TP14-0.3-0.4	EG005T: Chromium	7440-47-3	2	mg/kg	16	27	49.6	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	9	13	33.8	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	12	36.5	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	23	32	31.1	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	21	43.3	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	52	72	32.7	0% - 50%
ES2313155-052	TP22-0.0-0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	19	18	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	12	14.1	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	14	13	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	24	26	9.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	33	35	6.0	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	56	58	4.3	0% - 50%		
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5011957)									
ES2313155-075	HA08-0.1-0.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	12	16	32.1	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	5	5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	7	17.2	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	13	14	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	24	22	11.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	46	48	2.3	No Limit
ES2313155-097	TP08-C-0.4-0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	24	23	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	10	10	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	14	15	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	19	16.7	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	33	33	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	37	40	8.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5009205)									
ES2312918-002	Anonymous	EA055: Moisture Content	----	0.1	%	21.4	21.0	2.1	0% - 20%
ES2313192-002	Anonymous	EA055: Moisture Content	----	0.1	%	11.8	11.0	7.2	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5011953)									
ES2313155-004	TP02-0.0-0.1	EA055: Moisture Content	----	0.1	%	12.0	11.4	4.9	0% - 50%
ES2313155-022	TP10-0.0-0.1	EA055: Moisture Content	----	0.1	%	14.1	14.3	1.4	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5011954)									
ES2313155-035	TP15-0.3-0.4	EA055: Moisture Content	----	0.1	%	13.4	11.7	13.3	0% - 50%
ES2313155-061	HA01-0.0-0.1	EA055: Moisture Content	----	0.1	%	14.5	16.6	13.1	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5011962)									
ES2313155-079	HA10-0.0-0.1	EA055: Moisture Content	----	0.1	%	10.1	10.0	1.1	0% - 50%

Page : 4 of 45
 Work Order : ES2313155
 Client : SMEC AUSTRALIA PTY LTD
 Project : SINSW - Austral PS



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5009204)									
ES2312897-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5011950)									
ES2313155-001	TP01-0.0-0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2313155-018	TP08-0.4-0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5011952)									
ES2313155-033	TP14-0.3-0.4	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2313155-052	TP22-0.0-0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5011958)									
ES2313155-075	HA08-0.1-0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2313155-097	TP08-C-0.4-0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EK055: Ammonia as N (QC Lot: 5008398)									
ES2313155-049	TP21-0.0-0.1	EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	<20	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5007510)									
ES2313155-049	TP21-0.0-0.1	EK057G: Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg	0.2	0.3	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5009200)									
ES2313155-057	TP24-0.0-0.1	EK057G: Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg	0.6	0.6	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5011959)									
ES2313155-077	HA09-0.1-0.2	EK057G: Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5007512)									
ES2313155-049	TP21-0.0-0.1	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	1.2	1.4	11.7	0% - 50%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5009201)									
ES2313155-057	TP24-0.0-0.1	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	1.0	0.8	27.6	0% - 50%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5011961)									
ES2313155-077	HA09-0.1-0.2	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	8.0	7.6	4.7	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 5008047)									
ES2313083-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	9350	8530	9.2	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5008048)									
ES2313155-049	TP21-0.0-0.1	EK067G: Total Phosphorus as P	----	2	mg/kg	573	537	6.6	0% - 20%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5007511)									
ES2313155-049	TP21-0.0-0.1	EK071G: Reactive Phosphorus as P	14265-44-2	0.1	mg/kg	1.0	1.1	18.1	0% - 50%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5009202)									
ES2313155-057	TP24-0.0-0.1	EK071G: Reactive Phosphorus as P	14265-44-2	0.1	mg/kg	1.0	1.1	0.0	0% - 50%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5011960)									
ES2313155-077	HA09-0.1-0.2	EK071G: Reactive Phosphorus as P	14265-44-2	0.1	mg/kg	0.3	0.3	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 5008414)									
ES2313155-001	TP01-0.0-0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2313155-018	TP08-0.4-0.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 5008418)									
ES2313155-033	TP14-0.3-0.4	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2313155-052	TP22-0.0-0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 5008422)									
ES2313155-071	HA06-0.2-0.3	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2313155-088	HA15-0.1-0.2	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5008413)									
ES2313155-001	TP01-0.0-0.1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2313155-018	TP08-0.4-0.5	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5008413) - continued									
ES2313155-018	TP08-0.4-0.5	EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5008417)									
ES2313155-033	TP14-0.3-0.4	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2313155-052	TP22-0.0-0.1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5008417) - continued									
ES2313155-052	TP22-0.0-0.1	EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5008421)									
ES2313155-071	HA06-0.2-0.3	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
				EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2
ES2313155-088	HA15-0.1-0.2	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5008421) - continued									
ES2313155-088	HA15-0.1-0.2	EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5008413)									
ES2313155-001	TP01-0.0-0.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		ES2313155-018	TP08-0.4-0.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05
EP068: Demeton-S-methyl	919-86-8			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Dimethoate	60-51-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Diazinon	333-41-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Chlorpyrifos-methyl	5598-13-0			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Malathion	121-75-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5008413) - continued									
ES2313155-018	TP08-0.4-0.5	EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5008417)									
ES2313155-033	TP14-0.3-0.4	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2313155-052	TP22-0.0-0.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5008417) - continued									
ES2313155-052	TP22-0.0-0.1	EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5008421)									
ES2313155-071	HA06-0.2-0.3	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		ES2313155-088	HA15-0.1-0.2	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05
EP068: Demeton-S-methyl	919-86-8			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Dimethoate	60-51-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Diazinon	333-41-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Chlorpyrifos-methyl	5598-13-0			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Malathion	121-75-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Fenthion	55-38-9			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Chlorpyrifos	2921-88-2			0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5008421) - continued									
ES2313155-088	HA15-0.1-0.2	EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 5008412)									
ES2313155-001	TP01-0.0-0.1	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES2313155-018	TP08-0.4-0.5	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 5008416)									
ES2313155-033	TP14-0.3-0.4	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 5008416) - continued									
ES2313155-033	TP14-0.3-0.4	EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES2313155-052	TP22-0.0-0.1	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 5008420)									
ES2313155-071	HA06-0.2-0.3	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES2313155-088	HA15-0.1-0.2	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 5008420) - continued									
ES2313155-088	HA15-0.1-0.2	EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5008412)									
ES2313155-001	TP01-0.0-0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES2313155-018	TP08-0.4-0.5	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5008412) - continued									
ES2313155-018	TP08-0.4-0.5	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5008416)									
ES2313155-033	TP14-0.3-0.4	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		ES2313155-052	TP22-0.0-0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5
EP075(SIM): Acenaphthylene	208-96-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Acenaphthene	83-32-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Fluorene	86-73-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Phenanthrene	85-01-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Anthracene	120-12-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Fluoranthene	206-44-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Pyrene	129-00-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Benz(a)anthracene	56-55-3			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Chrysene	218-01-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
	205-82-3								



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5008416) - continued									
ES2313155-052	TP22-0.0-0.1	EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenzo(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5008420)									
ES2313155-071	HA06-0.2-0.3	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenzo(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		ES2313155-088	HA15-0.1-0.2	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5
EP075(SIM): Acenaphthylene	208-96-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Acenaphthene	83-32-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Fluorene	86-73-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Phenanthrene	85-01-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Anthracene	120-12-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Fluoranthene	206-44-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Pyrene	129-00-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Benz(a)anthracene	56-55-3			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Chrysene	218-01-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5008420) - continued									
ES2313155-088	HA15-0.1-0.2	EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Benzo(a)pyrene TEQ (zero)		----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5008220)									
ES2313287-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2313287-007	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5008411)									
ES2313155-001	TP01-0.0-0.1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2313155-018	TP08-0.4-0.5	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5008415)									
ES2313155-033	TP14-0.3-0.4	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2313155-052	TP22-0.0-0.1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5008419)									
ES2313155-071	HA06-0.2-0.3	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2313155-088	HA15-0.1-0.2	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5008511)									
ES2313155-001	TP01-0.0-0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2313155-018	TP08-0.4-0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5009585)									
ES2313155-034	TP15-0.0-0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5009585) - continued									
ES2313155-052	TP22-0.0-0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5011833)									
ES2313078-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2313155-084	HA12-0.1-0.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5008220)									
ES2313287-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2313287-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5008411)									
ES2313155-001	TP01-0.0-0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2313155-018	TP08-0.4-0.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5008415)									
ES2313155-033	TP14-0.3-0.4	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2313155-052	TP22-0.0-0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5008419)									
ES2313155-071	HA06-0.2-0.3	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2313155-088	HA15-0.1-0.2	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5008511)									
ES2313155-001	TP01-0.0-0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2313155-018	TP08-0.4-0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5009585)									
ES2313155-034	TP15-0.0-0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2313155-052	TP22-0.0-0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5011833)									
ES2313078-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2313155-084	HA12-0.1-0.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 5008220)									



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 5008220) - continued									
ES2313287-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<1.0	<1.0	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<1.0	<1.0	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<1.0	<1.0	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<1.0	<1.0	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<1.0	<1.0	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2313287-007	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<1.0	<1.0	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<1.0	<1.0	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<1.0	<1.0	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<1.0	<1.0	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<1.0	<1.0	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP080: BTEXN (QC Lot: 5008511)									
ES2313155-001	TP01-0.0-0.1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2313155-018	TP08-0.4-0.5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP080: BTEXN (QC Lot: 5009585)									
ES2313155-034	TP15-0.0-0.1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2313155-052	TP22-0.0-0.1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 5009585) - continued									
ES2313155-052	TP22-0.0-0.1	EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP080: BTEXN (QC Lot: 5011833)									
ES2313078-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2313155-084	HA12-0.1-0.2	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5012282)									
ES2313155-001	TP01-0.0-0.1	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0005	0.0006	0.0	No Limit
ES2313155-024	TP11-0.0-0.1	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5012304)									
ES2313155-052	TP22-0.0-0.1	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0008	0.0009	0.0	No Limit
ES2313240-003	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0012	0.0012	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5012282)									
ES2313155-001	TP01-0.0-0.1	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ES2313155-024	TP11-0.0-0.1	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5012282) - continued									
ES2313155-024	TP11-0.0-0.1	EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5012304)									
ES2313155-052	TP22-0.0-0.1	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ES2313240-003	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5012282)									
ES2313155-001	TP01-0.0-0.1	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ES2313155-024	TP11-0.0-0.1	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5012304)									
ES2313155-052	TP22-0.0-0.1	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5012304) - continued									
ES2313155-052	TP22-0.0-0.1	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ES2313240-003	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 5012171)									
ES2313016-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.024	0.024	0.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.012	0.012	0.0	No Limit
ES2313198-006	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5012283)									
ES2313021-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5012676)									
ES2312887-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2313006-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5012676)									
ES2312887-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2313006-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 5012676)									
ES2312887-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 5012676) - continued									
ES2312887-001	Anonymous	EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
ES2313006-001	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit



Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5009203)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	93.6	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	85.0	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	109	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	105	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	101	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	96.4	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	90.1	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5011949)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	99.2	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	102	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	112	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	99.5	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	96.4	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	97.8	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	90.8	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5011951)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	88.0	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	94.1	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	98.3	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	92.8	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	85.3	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	84.9	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	81.0	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5011957)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	96.9	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	85.6	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	109	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	107	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	97.7	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	95.6	80.0	120

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%)	
							Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5011957) - continued								
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	86.1	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5009204)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	100	70.0	125
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5011950)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	86.2	70.0	125
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5011952)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	86.8	70.0	125
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5011958)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	87.4	70.0	125
EK055: Ammonia as N (QCLot: 5008398)								
EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	125 mg/kg	99.4	84.0	104
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5007510)								
EK057G: Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg	<0.1	2.5 mg/kg	104	85.0	111
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5009200)								
EK057G: Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg	<0.1	2.5 mg/kg	103	85.0	111
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5011959)								
EK057G: Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg	<0.1	2.5 mg/kg	100.0	85.0	111
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5007512)								
EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	2.5 mg/kg	105	88.0	118
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5009201)								
EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	2.5 mg/kg	104	88.0	118
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5011961)								
EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	2.5 mg/kg	103	88.0	118
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5008047)								
EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	<20	1000 mg/kg	91.8	72.0	106
				<20	100 mg/kg	97.3	70.0	122
				<20	500 mg/kg	109	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5008048)								
EK067G: Total Phosphorus as P	----	2	mg/kg	<2	442 mg/kg	84.4	76.0	108
				<2	44.2 mg/kg	110	70.0	118
				<2	100 mg/kg	116	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5007511)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.1	mg/kg	<0.1	2.5 mg/kg	97.9	86.0	118
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5009202)								



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5009202) - continued								
EK071G: Reactive Phosphorus as P	14265-44-2	0.1	mg/kg	<0.1	2.5 mg/kg	94.8	86.0	118
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5011960)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.1	mg/kg	<0.1	2.5 mg/kg	94.9	86.0	118
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5008414)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	102	62.0	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5008418)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	96.2	62.0	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5008422)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	98.2	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 5008413)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	103	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	102	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	105	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	106	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	105	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	105	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	104	66.0	116
EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	105	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	103	69.0	115
EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	101	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	62.0	124
EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	99.0	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	105	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	101	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 5008417)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	96.9	65.0	117



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP068A: Organochlorine Pesticides (OC) (QCLot: 5008417) - continued								
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	101	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.8	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.5	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	101	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	102	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	99.9	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	100	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	101	66.0	116
EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	107	69.0	115
EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	94.0	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.9	62.0	124
EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	93.8	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	99.9	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	95.8	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 5008421)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.4	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	88.1	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.5	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	88.3	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	103	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	98.4	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	96.7	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	106	66.0	116
EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.7	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.3	67.0	123



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP068A: Organochlorine Pesticides (OC) (QCLot: 5008421) - continued								
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	69.0	115
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	107	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	62.0	124
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	94.3	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	107	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	97.5	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5008413)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	102	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	92.8	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	101	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	103	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	102	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	101	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	105	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	102	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	104	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	100	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	104	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	105	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	106	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	103	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	103	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	83.3	41.0	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5008417)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	95.3	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.9	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	93.1	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.1	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.3	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	72.0	120

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5008417) - continued								
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	96.8	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	100.0	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	97.4	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	105	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	100	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	100	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	102	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	98.8	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	99.9	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	82.6	41.0	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5008421)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	86.6	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	79.4	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	102	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.3	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	100	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	100	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	108	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	99.9	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	93.7	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	94.4	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	106	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.4	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	99.3	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	94.8	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	94.5	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	104	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	81.6	41.0	123
EP075(SIM)A: Phenolic Compounds (QCLot: 5008412)								



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)A: Phenolic Compounds (QCLot: 5008412) - continued								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	89.2	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	90.6	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	87.5	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	90.8	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	80.0	54.0	114
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	91.8	68.0	126
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	84.9	66.0	120
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	87.6	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	85.7	70.0	116
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	80.2	54.0	114
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	83.8	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	42.3	10.0	80.0
EP075(SIM)A: Phenolic Compounds (QCLot: 5008416)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	89.9	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	89.8	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	89.3	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	91.1	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	77.7	54.0	114
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	85.5	68.0	126
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	84.8	66.0	120
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	90.7	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	85.1	70.0	116
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	84.0	54.0	114
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	88.0	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	52.8	10.0	80.0
EP075(SIM)A: Phenolic Compounds (QCLot: 5008420)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	85.5	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	86.9	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	85.0	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	86.6	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	73.8	54.0	114
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	82.3	68.0	126
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	81.4	66.0	120
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	89.3	70.0	120



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)A: Phenolic Compounds (QCLot: 5008420) - continued								
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	82.5	70.0	116
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	81.1	54.0	114
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	82.9	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	43.0	10.0	80.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5008412)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	97.8	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	100	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	94.6	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	95.2	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	97.3	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	97.9	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	101	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	99.1	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	103	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	98.4	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	99.0	68.0	116
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	98.5	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	92.0	70.0	126
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	86.5	61.0	121
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	84.4	62.0	118
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	85.2	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5008416)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	91.6	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	89.9	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	92.5	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	89.8	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	93.6	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	94.7	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	95.1	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	96.3	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	92.5	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	96.6	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	89.3	68.0	116
	205-82-3							

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5008416) - continued								
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	103	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	92.8	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	94.6	61.0	121
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	92.5	62.0	118
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	95.4	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5008420)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	90.1	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	89.6	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	90.7	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	87.8	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	92.1	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	93.5	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	93.6	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	94.3	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	92.2	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	95.6	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	88.1	68.0	116
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	100	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	92.1	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	90.5	61.0	121
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	87.6	62.0	118
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	90.4	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5008220)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	113	72.2	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5008411)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	102	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	93.9	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	92.8	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5008415)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	100	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	101	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	98.0	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5008419)								



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5008419) - continued								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	105	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	93.9	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	88.5	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5008511)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	82.1	72.2	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5009585)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	101	72.2	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5011833)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	114	72.2	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5008220)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	81.0	72.4	133
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5008411)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	97.2	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	105	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	91.5	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5008415)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	99.5	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	99.2	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	97.2	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5008419)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	89.0	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	104	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	85.2	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5008511)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	77.3	72.4	133
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5009585)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	101	72.4	133
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5011833)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	114	72.4	133
EP080: BTEXN (QCLot: 5008220)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	101	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	98.0	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	94.6	77.4	121



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Concentration	LCS	Low	High	
EP080: BTEXN (QCLot: 5008220) - continued								
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	99.6	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	95.5	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	106	78.8	122
EP080: BTEXN (QCLot: 5008511)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	102	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	92.5	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	86.8	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	82.5	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	90.4	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	84.0	78.8	122
EP080: BTEXN (QCLot: 5009585)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	104	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	102	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	98.8	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	104	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	101	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	99.7	78.8	122
EP080: BTEXN (QCLot: 5011833)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	104	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	105	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	104	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	105	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	107	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	109	78.8	122
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5012282)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00125 mg/kg	109	72.0	128
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	115	67.0	130
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	68.0	136
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5012304)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.6	72.0	128
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	67.0	130



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5012304) - continued								
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.4	68.0	136
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5012282)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	102	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	121	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	125	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	124	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5012304)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	96.3	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	117	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	114	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	109	69.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5012282)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	118	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00125 mg/kg	126	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	124	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00125 mg/kg	109	69.2	143
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5012304)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	114	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00125 mg/kg	115	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	120	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00125 mg/kg	91.6	69.2	143

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 5012171)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.1	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	95.0	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.5	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.4	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.3	85.0	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.8	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	90.5	79.0	117



Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result			Low	High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5012283)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.7	77.0	111
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5007482)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	83.0	68.9	113
EP068A: Organochlorine Pesticides (OC) (QCLot: 5007481)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	85.9	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	86.0	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	91.2	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	87.7	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	91.4	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	86.3	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	88.4	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	91.1	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	90.6	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	93.5	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	92.7	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	89.2	65.2	113
EP068: 4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	90.5	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	96.2	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	89.4	67.3	114
EP068: 4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	92.4	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	92.6	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	94.2	65.2	112
EP068: 4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	88.7	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	93.7	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	91.4	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5007481)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	96.8	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	86.6	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	26.8	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	103	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	93.8	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	92.7	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	90.4	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	101	68.4	116



Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result			Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5007481) - continued								
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	89.8	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	92.7	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	90.1	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	92.2	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	87.0	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	92.2	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	102	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	82.4	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	93.9	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	97.4	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	100	51.6	128
EP075(SIM)A: Phenolic Compounds (QCLot: 5007479)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	31.6	24.5	61.9
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	63.0	52.0	90.0
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	59.1	51.0	91.0
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	52.6	44.0	88.0
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	60.2	48.0	100
EP075(SIM): 2,4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	67.1	49.0	99.0
EP075(SIM): 2,4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	63.0	53.0	105
EP075(SIM): 2,6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	60.3	57.0	105
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	64.1	53.0	99.0
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	68.0	50.0	106
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	72.0	51.0	105
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	56.6	10.0	95.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5007479)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	59.9	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	70.2	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	66.0	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	67.6	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	72.0	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	90.4	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	73.4	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	72.7	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	71.4	64.1	117



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5007479) - continued								
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	72.6	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	71.1	61.7	119
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	76.8	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	67.2	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	74.8	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	73.7	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	77.9	59.1	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5007480)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	63.8	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	76.6	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	95.5	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5012676)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	81.4	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5007480)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	78.4	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	92.9	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	86.6	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5012676)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	86.0	75.0	127
EP080: BTEXN (QCLot: 5012676)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	81.0	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	84.6	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	86.6	73.8	122
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	89.3	73.0	122
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	89.6	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	86.5	75.5	124

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number			Low	High



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5009203)							
ES2312897-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	96.3	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	95.8	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	101	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	101	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	100	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	99.6	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5011949)							
ES2313155-001	TP01-0.0-0.1	EG005T: Arsenic	7440-38-2	50 mg/kg	116	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	109	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	112	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	112	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	112	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	112	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	114	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5011951)							
ES2313155-033	TP14-0.3-0.4	EG005T: Arsenic	7440-38-2	50 mg/kg	88.3	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	88.5	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	85.1	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	88.3	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	89.2	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	87.6	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	89.1	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5011957)							
ES2313155-075	HA08-0.1-0.2	EG005T: Arsenic	7440-38-2	50 mg/kg	96.2	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	94.6	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	105	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	101	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	95.2	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	95.3	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	91.8	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5009204)							
ES2312897-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	105	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5011950)							
ES2313155-001	TP01-0.0-0.1	EG035T: Mercury	7439-97-6	5 mg/kg	99.6	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5011952)							
ES2313155-033	TP14-0.3-0.4	EG035T: Mercury	7439-97-6	5 mg/kg	98.8	70.0	130



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5011958)							
ES2313155-075	HA08-0.1-0.2	EG035T: Mercury	7439-97-6	5 mg/kg	97.2	70.0	130
EK055: Ammonia as N (QCLot: 5008398)							
ES2313155-049	TP21-0.0-0.1	EK055: Ammonia as N	7664-41-7	125 mg/kg	86.2	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5007510)							
ES2313155-049	TP21-0.0-0.1	EK057G: Nitrite as N (Sol.)	14797-65-0	2.5 mg/kg	82.1	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5009200)							
ES2313113-010	Anonymous	EK057G: Nitrite as N (Sol.)	14797-65-0	2.5 mg/kg	112	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5011959)							
ES2313155-077	HA09-0.1-0.2	EK057G: Nitrite as N (Sol.)	14797-65-0	2.5 mg/kg	97.3	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5007512)							
ES2313155-049	TP21-0.0-0.1	EK059G: Nitrite + Nitrate as N (Sol.)	----	2.5 mg/kg	84.8	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5009201)							
ES2313113-010	Anonymous	EK059G: Nitrite + Nitrate as N (Sol.)	----	2.5 mg/kg	108	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5011961)							
ES2313155-077	HA09-0.1-0.2	EK059G: Nitrite + Nitrate as N (Sol.)	----	2.5 mg/kg	80.2	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5008047)							
ES2313083-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	500 mg/kg	# Not Determined	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5008048)							
ES2313155-049	TP21-0.0-0.1	EK067G: Total Phosphorus as P	----	100 mg/kg	# Not Determined	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5007511)							
ES2313155-049	TP21-0.0-0.1	EK071G: Reactive Phosphorus as P	14265-44-2	2.5 mg/kg	92.0	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5009202)							
ES2313155-057	TP24-0.0-0.1	EK071G: Reactive Phosphorus as P	14265-44-2	2.5 mg/kg	99.1	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5011960)							
ES2313155-077	HA09-0.1-0.2	EK071G: Reactive Phosphorus as P	14265-44-2	2.5 mg/kg	100	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5008414)							
ES2313155-001	TP01-0.0-0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	85.3	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5008418)							
ES2313155-033	TP14-0.3-0.4	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	108	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5008422)							
ES2313155-071	HA06-0.2-0.3	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	89.1	70.0	130



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 5008413)							
ES2313155-001	TP01-0.0-0.1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	108	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	103	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	107	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	113	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	97.1	70.0	130
		EP068: 4.4'-DDT	50-29-3	2 mg/kg	81.0	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 5008417)							
ES2313155-033	TP14-0.3-0.4	EP068: gamma-BHC	58-89-9	0.5 mg/kg	88.2	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	83.7	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	86.7	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	91.0	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	88.2	70.0	130
		EP068: 4.4'-DDT	50-29-3	2 mg/kg	72.4	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 5008421)							
ES2313155-071	HA06-0.2-0.3	EP068: gamma-BHC	58-89-9	0.5 mg/kg	104	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	100	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	109	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	106	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	97.8	70.0	130
		EP068: 4.4'-DDT	50-29-3	2 mg/kg	78.8	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5008413)							
ES2313155-001	TP01-0.0-0.1	EP068: Diazinon	333-41-5	0.5 mg/kg	114	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	97.6	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	95.1	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	102	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	89.6	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5008417)							
ES2313155-033	TP14-0.3-0.4	EP068: Diazinon	333-41-5	0.5 mg/kg	84.4	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	77.4	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	85.8	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	81.8	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	102	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5008421)							
ES2313155-071	HA06-0.2-0.3	EP068: Diazinon	333-41-5	0.5 mg/kg	74.4	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	89.1	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	98.8	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	103	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	84.1	70.0	130



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 5008412)							
ES2313155-001	TP01-0.0-0.1	EP075(SIM): Phenol	108-95-2	10 mg/kg	94.0	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	95.1	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	91.6	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	92.3	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	59.2	20.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 5008416)							
ES2313155-033	TP14-0.3-0.4	EP075(SIM): Phenol	108-95-2	10 mg/kg	92.6	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	94.6	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	88.1	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	91.9	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	75.1	20.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 5008420)							
ES2313155-071	HA06-0.2-0.3	EP075(SIM): Phenol	108-95-2	10 mg/kg	85.6	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	88.0	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	84.5	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	86.2	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	71.4	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5008412)							
ES2313155-001	TP01-0.0-0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	97.8	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	104	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5008416)							
ES2313155-033	TP14-0.3-0.4	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	96.6	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	102	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5008420)							
ES2313155-071	HA06-0.2-0.3	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	90.6	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	95.8	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5008220)							
ES2313287-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	110	60.4	142
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5008411)							
ES2313155-001	TP01-0.0-0.1	EP071: C10 - C14 Fraction	----	480 mg/kg	120	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	117	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	118	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5008415)							
ES2313155-033	TP14-0.3-0.4	EP071: C10 - C14 Fraction	----	480 mg/kg	92.1	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	105	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	115	52.0	132



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5008419)							
ES2313155-071	HA06-0.2-0.3	EP071: C10 - C14 Fraction	----	480 mg/kg	111	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	112	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	112	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5008511)							
ES2313155-001	TP01-0.0-0.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	93.2	60.4	142
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5009585)							
ES2313155-034	TP15-0.0-0.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	93.7	60.4	142
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5011833)							
ES2313078-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	101	60.4	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5008220)							
ES2313287-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	102	61.1	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5008411)							
ES2313155-001	TP01-0.0-0.1	EP071: >C10 - C16 Fraction	----	860 mg/kg	108	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	120	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	103	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5008415)							
ES2313155-033	TP14-0.3-0.4	EP071: >C10 - C16 Fraction	----	860 mg/kg	87.8	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	108	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	117	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5008419)							
ES2313155-071	HA06-0.2-0.3	EP071: >C10 - C16 Fraction	----	860 mg/kg	103	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	115	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	97.8	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5008511)							
ES2313155-001	TP01-0.0-0.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	91.7	61.1	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5009585)							
ES2313155-034	TP15-0.0-0.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	94.1	61.1	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5011833)							
ES2313078-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	99.5	61.1	142
EP080: BTEXN (QCLot: 5008220)							
ES2313287-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	93.2	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	83.6	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	83.9	67.4	123
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	84.1	66.4	121
			106-42-3				



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 5008220) - continued							
ES2313287-001	Anonymous	EP080: ortho-Xylene	95-47-6	2.5 mg/kg	87.1	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	84.5	61.1	115
EP080: BTEXN (QCLot: 5008511)							
ES2313155-001	TP01-0.0-0.1	EP080: Benzene	71-43-2	2.5 mg/kg	90.1	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	87.6	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	90.8	67.4	123
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	90.7	66.4	121
		106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	95.2	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	77.3	61.1	115
EP080: BTEXN (QCLot: 5009585)							
ES2313155-034	TP15-0.0-0.1	EP080: Benzene	71-43-2	2.5 mg/kg	92.4	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	91.2	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	94.4	67.4	123
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	94.3	66.4	121
		106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	94.4	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	91.7	61.1	115
EP080: BTEXN (QCLot: 5011833)							
ES2313078-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	88.3	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	92.0	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	93.9	67.4	123
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	93.9	66.4	121
		106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	94.8	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	92.4	61.1	115
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5012282)							
ES2313155-001	TP01-0.0-0.1	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00125 mg/kg	105	72.0	128
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00125 mg/kg	114	67.0	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00125 mg/kg	103	68.0	136
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5012304)							
ES2313155-052	TP22-0.0-0.1	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00125 mg/kg	108	72.0	128
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00125 mg/kg	115	67.0	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00125 mg/kg	104	68.0	136
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5012282)							
ES2313155-001	TP01-0.0-0.1	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	94.8	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	126	69.0	132



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5012282) - continued							
ES2313155-001	TP01-0.0-0.1	EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	110	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	121	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	111	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5012304)							
ES2313155-052	TP22-0.0-0.1	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	99.4	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	110	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	120	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	117	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	116	69.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5012282)							
ES2313155-001	TP01-0.0-0.1	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00125 mg/kg	114	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00125 mg/kg	139	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.00125 mg/kg	123	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00125 mg/kg	107	69.2	143
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5012304)							
ES2313155-052	TP22-0.0-0.1	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00125 mg/kg	110	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00125 mg/kg	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.00125 mg/kg	127	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00125 mg/kg	92.8	69.2	143
Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 5012171)							
ES2313021-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.0	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	99.1	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	99.3	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	100	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	106	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	100	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	97.1	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5012283)							
ES2313059-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	82.4	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5012676)							
ES2312887-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	106	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5012676)							
ES2312887-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	106	70.0	130



Sub-Matrix: WATER				Matrix Spike (MS) Report			
Laboratory sample ID		Sample ID		Spike	SpikeRecovery(%)	Acceptable Limits (%)	
		Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 5012676)							
ES2312887-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	98.9	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	95.0	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	100	70.0	130
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	98.5	70.0	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	25 µg/L	96.0	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	92.9	70.0	130



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2313155	Page	: 1 of 26
Client	: SMEC AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: SAM VAUGHAN	Telephone	: +61-2-8784 8555
Project	: SINSW - Austral PS	Date Samples Received	: 20-Apr-2023
Site	: ----	Issue Date	: 28-Apr-2023
Sampler	: HARRISON WOOD	No. of samples received	: 115
Order number	: SINSW AUST 30018043 210.1 BATCH 1 of 1	No. of samples analysed	: 64

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser	ES2313083--002	Anonymous	Total Kjeldahl Nitrogen as N	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EK067G: Total Phosphorus as P by Discrete Analyser	ES2313155--049	TP21-0.0-0.1	Total Phosphorus as P	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	7				
Laboratory Duplicates (DUP)					
Moisture Content	7	71	9.86	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	0				
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	8	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	8	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055) TP01-0.0-0.1, TP01-0.2-0.3, TP02-0.0-0.1, TP03-0.0-0.1, TP07-0.0-0.1, TP07-0.3-0.4, TP08-0.0-0.1, TP08-0.4-0.5, TP09-0.0-0.1, TP09-0.5-0.6, TP13-0.2-0.3, TP14-0.0-0.1, TP14-0.3-0.4, TP15-0.0-0.1, TP15-0.3-0.4, TP16-0.0-0.1, TP16-0.2-0.3, TP17-0.0-0.1, TP18-0.0-0.1, TP19-0.3-0.4, TP20-0.0-0.1, TP21-0.0-0.1, TP22-0.0-0.1, TP22-0.2-0.3, TP23-0.0-0.1, DUP01, DUP02	18-Apr-2023	----	----	----	26-Apr-2023	02-May-2023	✓	
Soil Glass Jar - Unpreserved (EA055) TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	----	----	----	24-Apr-2023	03-May-2023	✓	
Soil Glass Jar - Unpreserved (EA055) TP04-0.0-0.1, TP05-0.0-0.1, TP06-0.0-0.1, TP10-0.0-0.1, TP11-0.0-0.1, TP11-0.1-0.2, TP12-0.0-0.1, TP13-0.0-0.1, TP08-A-0.5-0.6, TP08-C-0.4-0.5	19-Apr-2023	----	----	----	26-Apr-2023	03-May-2023	✓	
Soil Glass Jar - Unpreserved (EA055) HA01-0.0-0.1, HA02-0.0-0.1, HA03-0.1-0.2, HA04-0.1-0.2, HA05-0.2-0.3, HA06-0.2-0.3, HA07-0.0-0.1, HA08-0.1-0.2, HA09-0.1-0.2, HA10-0.0-0.1, HA10-0.2-0.3, HA11-0.1-0.2, HA12-0.1-0.2, HA13-0.1-0.2, HA14-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	----	----	----	26-Apr-2023	04-May-2023	✓	



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200) TP01-0.0-0.1, TP02-0.0-0.1, TP03-0.0-0.1, TP07-0.0-0.1, TP07-0.3-0.4, TP08-0.0-0.1, TP08-0.4-0.5, TP09-0.0-0.1, TP13-0.2-0.3, TP14-0.0-0.1, TP15-0.0-0.1, TP15-0.3-0.4, TP16-0.0-0.1, TP17-0.0-0.1, TP18-0.0-0.1, TP19-0.0-0.1, TP20-0.0-0.1, TP21-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1	18-Apr-2023	----	----	----	26-Apr-2023	15-Oct-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200) TP04-0.0-0.1, TP05-0.0-0.1, TP06-0.0-0.1, TP10-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP13-0.0-0.1, TP24-0.0-0.1, TP25-0.0-0.1, TP08-A-0.5-0.6, TP08-B-0.1-0.2, TP08-C-0.1-0.2, TP08-D-0.1-0.2	19-Apr-2023	----	----	----	26-Apr-2023	16-Oct-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200) HA01-0.0-0.1, HA02-0.0-0.1, HA03-0.1-0.2, HA04-0.1-0.2, HA05-0.2-0.3, HA06-0.2-0.3, HA07-0.0-0.1, HA08-0.1-0.2, HA09-0.1-0.2, HA10-0.0-0.1, HA11-0.1-0.2, HA12-0.1-0.2, HA13-0.1-0.2, HA14-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	----	----	----	26-Apr-2023	17-Oct-2023	✓

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) TP01-0.0-0.1, TP02-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP13-0.2-0.3, TP14-0.3-0.4, TP15-0.3-0.4, TP16-0.2-0.3, TP18-0.0-0.1, TP20-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, DUP02	TP01-0.2-0.3, TP03-0.0-0.1, TP07-0.3-0.4, TP08-0.4-0.5, TP09-0.5-0.6, TP14-0.0-0.1, TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP19-0.3-0.4, TP21-0.0-0.1, TP22-0.2-0.3, DUP01,	18-Apr-2023	26-Apr-2023	15-Oct-2023	✓	27-Apr-2023	15-Oct-2023	✓
Soil Glass Jar - Unpreserved (EG005T) TP04-0.0-0.1, TP06-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP24-0.0-0.1, TP08-A-0.5-0.6,	TP05-0.0-0.1, TP10-0.0-0.1, TP11-0.1-0.2, TP13-0.0-0.1, TP25-0.0-0.1, TP08-C-0.4-0.5	19-Apr-2023	26-Apr-2023	16-Oct-2023	✓	27-Apr-2023	16-Oct-2023	✓
Soil Glass Jar - Unpreserved (EG005T) HA01-0.0-0.1, HA03-0.1-0.2, HA05-0.2-0.3, HA07-0.0-0.1, HA09-0.1-0.2, HA10-0.2-0.3, HA12-0.1-0.2, HA14-0.1-0.2,	HA02-0.0-0.1, HA04-0.1-0.2, HA06-0.2-0.3, HA08-0.1-0.2, HA10-0.0-0.1, HA11-0.1-0.2, HA13-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	26-Apr-2023	17-Oct-2023	✓	27-Apr-2023	17-Oct-2023	✓



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) TP01-0.0-0.1, TP02-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP13-0.2-0.3, TP14-0.3-0.4, TP15-0.3-0.4, TP16-0.2-0.3, TP18-0.0-0.1, TP20-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, DUP02 TP01-0.2-0.3, TP03-0.0-0.1, TP07-0.3-0.4, TP08-0.4-0.5, TP09-0.5-0.6, TP14-0.0-0.1, TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP19-0.3-0.4, TP21-0.0-0.1, TP22-0.2-0.3, DUP01,	18-Apr-2023	26-Apr-2023	16-May-2023	✔	28-Apr-2023	16-May-2023	✔
Soil Glass Jar - Unpreserved (EG035T) TP04-0.0-0.1, TP06-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP24-0.0-0.1, TP08-A-0.5-0.6, TP05-0.0-0.1, TP10-0.0-0.1, TP11-0.1-0.2, TP13-0.0-0.1, TP25-0.0-0.1, TP08-C-0.4-0.5	19-Apr-2023	26-Apr-2023	17-May-2023	✔	28-Apr-2023	17-May-2023	✔
Soil Glass Jar - Unpreserved (EG035T) HA01-0.0-0.1, HA03-0.1-0.2, HA05-0.2-0.3, HA07-0.0-0.1, HA09-0.1-0.2, HA10-0.2-0.3, HA12-0.1-0.2, HA14-0.1-0.2, HA02-0.0-0.1, HA04-0.1-0.2, HA06-0.2-0.3, HA08-0.1-0.2, HA10-0.0-0.1, HA11-0.1-0.2, HA13-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	26-Apr-2023	18-May-2023	✔	28-Apr-2023	18-May-2023	✔
EK055: Ammonia as N							
Soil Glass Jar - Unpreserved (EK055) TP21-0.0-0.1	18-Apr-2023	----	----	----	24-Apr-2023	16-May-2023	✔
Soil Glass Jar - Unpreserved (EK055) TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	----	----	----	24-Apr-2023	17-May-2023	✔
Soil Glass Jar - Unpreserved (EK055) HA09-0.1-0.2, HA12-0.1-0.2	20-Apr-2023	----	----	----	24-Apr-2023	18-May-2023	✔



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK057G: Nitrite as N by Discrete Analyser							
Soil Glass Jar - Unpreserved (EK057G) TP21-0.0-0.1	18-Apr-2023	24-Apr-2023	25-Apr-2023	✔	24-Apr-2023	26-Apr-2023	✔
Soil Glass Jar - Unpreserved (EK057G) TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	26-Apr-2023	26-Apr-2023	✔	26-Apr-2023	28-Apr-2023	✔
Soil Glass Jar - Unpreserved (EK057G) HA09-0.1-0.2, HA12-0.1-0.2	20-Apr-2023	27-Apr-2023	27-Apr-2023	✔	27-Apr-2023	29-Apr-2023	✔
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Soil Glass Jar - Unpreserved (EK059G) TP21-0.0-0.1	18-Apr-2023	24-Apr-2023	16-May-2023	✔	24-Apr-2023	26-Apr-2023	✔
Soil Glass Jar - Unpreserved (EK059G) TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	26-Apr-2023	17-May-2023	✔	26-Apr-2023	28-Apr-2023	✔
Soil Glass Jar - Unpreserved (EK059G) HA09-0.1-0.2, HA12-0.1-0.2	20-Apr-2023	27-Apr-2023	18-May-2023	✔	27-Apr-2023	29-Apr-2023	✔
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Soil Glass Jar - Unpreserved (EK061G) TP21-0.0-0.1	18-Apr-2023	24-Apr-2023	16-May-2023	✔	26-Apr-2023	22-May-2023	✔
Soil Glass Jar - Unpreserved (EK061G) TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	24-Apr-2023	17-May-2023	✔	26-Apr-2023	22-May-2023	✔
Soil Glass Jar - Unpreserved (EK061G) HA09-0.1-0.2, HA12-0.1-0.2	20-Apr-2023	24-Apr-2023	18-May-2023	✔	26-Apr-2023	22-May-2023	✔
EK067G: Total Phosphorus as P by Discrete Analyser							
Soil Glass Jar - Unpreserved (EK067G) TP21-0.0-0.1	18-Apr-2023	24-Apr-2023	16-May-2023	✔	26-Apr-2023	22-May-2023	✔
Soil Glass Jar - Unpreserved (EK067G) TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	24-Apr-2023	17-May-2023	✔	26-Apr-2023	22-May-2023	✔
Soil Glass Jar - Unpreserved (EK067G) HA09-0.1-0.2, HA12-0.1-0.2	20-Apr-2023	24-Apr-2023	18-May-2023	✔	26-Apr-2023	22-May-2023	✔
EK071G: Reactive Phosphorus as P by discrete analyser							
Soil Glass Jar - Unpreserved (EK071G) TP21-0.0-0.1	18-Apr-2023	24-Apr-2023	25-Apr-2023	✔	24-Apr-2023	26-Apr-2023	✔
Soil Glass Jar - Unpreserved (EK071G) TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	26-Apr-2023	26-Apr-2023	✔	26-Apr-2023	28-Apr-2023	✔
Soil Glass Jar - Unpreserved (EK071G) HA09-0.1-0.2, HA12-0.1-0.2	20-Apr-2023	27-Apr-2023	27-Apr-2023	✔	27-Apr-2023	29-Apr-2023	✔



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) TP01-0.0-0.1	18-Apr-2023	26-Apr-2023	02-May-2023	✓	27-Apr-2023	05-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP066) TP01-0.2-0.3, TP02-0.0-0.1, TP03-0.0-0.1, TP07-0.0-0.1, TP07-0.3-0.4, TP08-0.0-0.1, TP08-0.4-0.5, TP09-0.0-0.1, TP09-0.5-0.6, TP13-0.2-0.3, TP14-0.0-0.1	18-Apr-2023	26-Apr-2023	02-May-2023	✓	28-Apr-2023	05-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP066) TP14-0.3-0.4, TP15-0.0-0.1, TP15-0.3-0.4, TP16-0.0-0.1, TP16-0.2-0.3, TP17-0.0-0.1, TP18-0.0-0.1, TP19-0.3-0.4, TP20-0.0-0.1, TP21-0.0-0.1, TP22-0.0-0.1, TP22-0.2-0.3, TP23-0.0-0.1	18-Apr-2023	27-Apr-2023	02-May-2023	✓	27-Apr-2023	06-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP066) DUP01, DUP02	18-Apr-2023	27-Apr-2023	02-May-2023	✓	28-Apr-2023	06-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP066) TP04-0.0-0.1, TP05-0.0-0.1, TP06-0.0-0.1, TP10-0.0-0.1, TP11-0.0-0.1, TP11-0.1-0.2, TP12-0.0-0.1, TP13-0.0-0.1	19-Apr-2023	26-Apr-2023	03-May-2023	✓	28-Apr-2023	05-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP066) TP24-0.0-0.1, TP25-0.0-0.1, TP08-A-0.5-0.6, TP08-C-0.4-0.5	19-Apr-2023	27-Apr-2023	03-May-2023	✓	27-Apr-2023	06-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP066) HA01-0.0-0.1, HA02-0.0-0.1, HA03-0.1-0.2, HA04-0.1-0.2, HA05-0.2-0.3, HA06-0.2-0.3, HA07-0.0-0.1, HA08-0.1-0.2, HA09-0.1-0.2, HA10-0.0-0.1, HA10-0.2-0.3, HA11-0.1-0.2, HA12-0.1-0.2, HA13-0.1-0.2, HA14-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	27-Apr-2023	04-May-2023	✓	27-Apr-2023	06-Jun-2023	✓



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068) TP01-0.0-0.1, TP02-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP13-0.2-0.3, TP01-0.2-0.3, TP03-0.0-0.1, TP07-0.3-0.4, TP08-0.4-0.5, TP09-0.5-0.6, TP14-0.0-0.1	18-Apr-2023	26-Apr-2023	02-May-2023	✔	28-Apr-2023	05-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) TP14-0.3-0.4, TP15-0.3-0.4, TP16-0.2-0.3, TP18-0.0-0.1, TP20-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP19-0.3-0.4, TP21-0.0-0.1, TP22-0.2-0.3,	18-Apr-2023	27-Apr-2023	02-May-2023	✔	27-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) DUP01, DUP02	18-Apr-2023	27-Apr-2023	02-May-2023	✔	28-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) TP04-0.0-0.1, TP06-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP05-0.0-0.1, TP10-0.0-0.1, TP11-0.1-0.2, TP13-0.0-0.1	19-Apr-2023	26-Apr-2023	03-May-2023	✔	28-Apr-2023	05-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	27-Apr-2023	03-May-2023	✔	27-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) TP08-A-0.5-0.6, TP08-C-0.4-0.5	19-Apr-2023	27-Apr-2023	03-May-2023	✔	28-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) HA01-0.0-0.1, HA07-0.0-0.1, HA09-0.1-0.2, HA10-0.2-0.3, HA12-0.1-0.2, HA14-0.1-0.2, HA06-0.2-0.3, HA08-0.1-0.2, HA10-0.0-0.1, HA11-0.1-0.2, HA13-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	27-Apr-2023	04-May-2023	✔	27-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) HA02-0.0-0.1, HA04-0.1-0.2, HA03-0.1-0.2, HA05-0.2-0.3	20-Apr-2023	27-Apr-2023	04-May-2023	✔	28-Apr-2023	06-Jun-2023	✔	



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068) TP01-0.0-0.1, TP02-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP13-0.2-0.3, TP01-0.2-0.3, TP03-0.0-0.1, TP07-0.3-0.4, TP08-0.4-0.5, TP09-0.5-0.6, TP14-0.0-0.1	18-Apr-2023	26-Apr-2023	02-May-2023	✔	28-Apr-2023	05-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) TP14-0.3-0.4, TP15-0.3-0.4, TP16-0.2-0.3, TP18-0.0-0.1, TP20-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP19-0.3-0.4, TP21-0.0-0.1, TP22-0.2-0.3,	18-Apr-2023	27-Apr-2023	02-May-2023	✔	27-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) DUP01, DUP02	18-Apr-2023	27-Apr-2023	02-May-2023	✔	28-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) TP04-0.0-0.1, TP06-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP05-0.0-0.1, TP10-0.0-0.1, TP11-0.1-0.2, TP13-0.0-0.1	19-Apr-2023	26-Apr-2023	03-May-2023	✔	28-Apr-2023	05-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	27-Apr-2023	03-May-2023	✔	27-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) TP08-A-0.5-0.6, TP08-C-0.4-0.5	19-Apr-2023	27-Apr-2023	03-May-2023	✔	28-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) HA01-0.0-0.1, HA07-0.0-0.1, HA09-0.1-0.2, HA10-0.2-0.3, HA12-0.1-0.2, HA14-0.1-0.2, HA06-0.2-0.3, HA08-0.1-0.2, HA10-0.0-0.1, HA11-0.1-0.2, HA13-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	27-Apr-2023	04-May-2023	✔	27-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP068) HA02-0.0-0.1, HA04-0.1-0.2, HA03-0.1-0.2, HA05-0.2-0.3	20-Apr-2023	27-Apr-2023	04-May-2023	✔	28-Apr-2023	06-Jun-2023	✔	



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP075(SIM)A: Phenolic Compounds								
Soil Glass Jar - Unpreserved (EP075(SIM)) TP01-0.0-0.1, TP02-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP13-0.2-0.3, TP01-0.2-0.3, TP03-0.0-0.1, TP07-0.3-0.4, TP08-0.4-0.5, TP09-0.5-0.6, TP14-0.0-0.1	18-Apr-2023	26-Apr-2023	02-May-2023	✔	28-Apr-2023	05-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) TP14-0.3-0.4, TP15-0.3-0.4, TP16-0.2-0.3, TP18-0.0-0.1, TP20-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP19-0.3-0.4, TP21-0.0-0.1, TP22-0.2-0.3,	18-Apr-2023	27-Apr-2023	02-May-2023	✔	27-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) DUP01, DUP02	18-Apr-2023	27-Apr-2023	02-May-2023	✔	28-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) TP04-0.0-0.1, TP06-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP05-0.0-0.1, TP10-0.0-0.1, TP11-0.1-0.2, TP13-0.0-0.1	19-Apr-2023	26-Apr-2023	03-May-2023	✔	28-Apr-2023	05-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	27-Apr-2023	03-May-2023	✔	27-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) TP08-A-0.5-0.6, TP08-C-0.4-0.5	19-Apr-2023	27-Apr-2023	03-May-2023	✔	28-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) HA01-0.0-0.1, HA03-0.1-0.2, HA05-0.2-0.3, HA02-0.0-0.1, HA04-0.1-0.2, HA06-0.2-0.3	20-Apr-2023	27-Apr-2023	04-May-2023	✔	27-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) HA07-0.0-0.1, HA09-0.1-0.2, HA10-0.2-0.3, HA12-0.1-0.2, HA14-0.1-0.2, HA08-0.1-0.2, HA10-0.0-0.1, HA11-0.1-0.2, HA13-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	27-Apr-2023	04-May-2023	✔	28-Apr-2023	06-Jun-2023	✔	



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM)) TP01-0.0-0.1, TP02-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP13-0.2-0.3, TP01-0.2-0.3, TP03-0.0-0.1, TP07-0.3-0.4, TP08-0.4-0.5, TP09-0.5-0.6, TP14-0.0-0.1	18-Apr-2023	26-Apr-2023	02-May-2023	✔	28-Apr-2023	05-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) TP14-0.3-0.4, TP15-0.3-0.4, TP16-0.2-0.3, TP18-0.0-0.1, TP20-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP19-0.3-0.4, TP21-0.0-0.1, TP22-0.2-0.3,	18-Apr-2023	27-Apr-2023	02-May-2023	✔	27-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) DUP01, DUP02	18-Apr-2023	27-Apr-2023	02-May-2023	✔	28-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) TP04-0.0-0.1, TP06-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP05-0.0-0.1, TP10-0.0-0.1, TP11-0.1-0.2, TP13-0.0-0.1	19-Apr-2023	26-Apr-2023	03-May-2023	✔	28-Apr-2023	05-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	27-Apr-2023	03-May-2023	✔	27-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) TP08-A-0.5-0.6, TP08-C-0.4-0.5	19-Apr-2023	27-Apr-2023	03-May-2023	✔	28-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) HA01-0.0-0.1, HA03-0.1-0.2, HA05-0.2-0.3, HA02-0.0-0.1, HA04-0.1-0.2, HA06-0.2-0.3	20-Apr-2023	27-Apr-2023	04-May-2023	✔	27-Apr-2023	06-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) HA07-0.0-0.1, HA09-0.1-0.2, HA10-0.2-0.3, HA12-0.1-0.2, HA14-0.1-0.2, HA08-0.1-0.2, HA10-0.0-0.1, HA11-0.1-0.2, HA13-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	27-Apr-2023	04-May-2023	✔	28-Apr-2023	06-Jun-2023	✔	



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) Trip Blank	11-Apr-2023	24-Apr-2023	25-Apr-2023	✓	24-Apr-2023	25-Apr-2023	✓
Soil Glass Jar - Unpreserved (EP080) TP01-0.0-0.1, TP02-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP13-0.2-0.3, TP01-0.2-0.3, TP03-0.0-0.1, TP07-0.3-0.4, TP08-0.4-0.5, TP09-0.5-0.6, TP14-0.0-0.1	18-Apr-2023	24-Apr-2023	02-May-2023	✓	26-Apr-2023	02-May-2023	✓
Soil Glass Jar - Unpreserved (EP080) TP14-0.3-0.4, TP15-0.3-0.4, TP16-0.2-0.3, TP18-0.0-0.1, TP20-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP19-0.3-0.4, TP21-0.0-0.1, TP22-0.2-0.3	18-Apr-2023	24-Apr-2023	02-May-2023	✓	27-Apr-2023	02-May-2023	✓
Soil Glass Jar - Unpreserved (EP080) TP01-0.0-0.1, TP02-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP13-0.2-0.3, DUP01, TP01-0.2-0.3, TP03-0.0-0.1, TP07-0.3-0.4, TP08-0.4-0.5, TP09-0.5-0.6, TP14-0.0-0.1, DUP02	18-Apr-2023	26-Apr-2023	02-May-2023	✓	27-Apr-2023	02-May-2023	✓
Soil Glass Jar - Unpreserved (EP071) TP14-0.3-0.4	18-Apr-2023	27-Apr-2023	02-May-2023	✓	27-Apr-2023	06-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP071) TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP19-0.3-0.4, TP21-0.0-0.1, TP22-0.2-0.3, DUP01, TP15-0.3-0.4, TP16-0.2-0.3, TP18-0.0-0.1, TP20-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, DUP02	18-Apr-2023	27-Apr-2023	02-May-2023	✓	28-Apr-2023	06-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP080) TP04-0.0-0.1, TP06-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP05-0.0-0.1, TP10-0.0-0.1, TP11-0.1-0.2, TP13-0.0-0.1	19-Apr-2023	24-Apr-2023	03-May-2023	✓	26-Apr-2023	03-May-2023	✓
Soil Glass Jar - Unpreserved (EP080) TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	24-Apr-2023	03-May-2023	✓	27-Apr-2023	03-May-2023	✓
Soil Glass Jar - Unpreserved (EP080)							



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP080/071: Total Petroleum Hydrocarbons - Continued								
TP04-0.0-0.1, TP06-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP08-A-0.5-0.6,	TP05-0.0-0.1, TP10-0.0-0.1, TP11-0.1-0.2, TP13-0.0-0.1, TP08-C-0.4-0.5	19-Apr-2023	26-Apr-2023	03-May-2023	✔	27-Apr-2023	03-May-2023	✔
Soil Glass Jar - Unpreserved (EP071) TP24-0.0-0.1, TP08-A-0.5-0.6,	TP25-0.0-0.1, TP08-C-0.4-0.5	19-Apr-2023	27-Apr-2023	03-May-2023	✔	28-Apr-2023	06-Jun-2023	✔
Soil Glass Jar - Unpreserved (EP080) HA01-0.0-0.1, HA03-0.1-0.2, HA05-0.2-0.3	HA02-0.0-0.1, HA04-0.1-0.2,	20-Apr-2023	24-Apr-2023	04-May-2023	✔	27-Apr-2023	04-May-2023	✔
Soil Glass Jar - Unpreserved (EP080) HA06-0.2-0.3, HA08-0.1-0.2, HA10-0.0-0.1, HA11-0.1-0.2	HA07-0.0-0.1, HA09-0.1-0.2, HA10-0.2-0.3,	20-Apr-2023	26-Apr-2023	04-May-2023	✔	26-Apr-2023	04-May-2023	✔
Soil Glass Jar - Unpreserved (EP080) HA12-0.1-0.2, HA14-0.1-0.2,	HA13-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	26-Apr-2023	04-May-2023	✔	27-Apr-2023	04-May-2023	✔
Soil Glass Jar - Unpreserved (EP071) HA01-0.0-0.1, HA03-0.1-0.2, HA05-0.2-0.3, HA07-0.0-0.1, HA09-0.1-0.2, HA10-0.2-0.3, HA12-0.1-0.2, HA14-0.1-0.2,	HA02-0.0-0.1, HA04-0.1-0.2, HA06-0.2-0.3, HA08-0.1-0.2, HA10-0.0-0.1, HA11-0.1-0.2, HA13-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	27-Apr-2023	04-May-2023	✔	28-Apr-2023	06-Jun-2023	✔



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) Trip Blank	11-Apr-2023	24-Apr-2023	25-Apr-2023	✔	24-Apr-2023	25-Apr-2023	✔
Soil Glass Jar - Unpreserved (EP080) TP01-0.0-0.1, TP02-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP13-0.2-0.3, TP01-0.2-0.3, TP03-0.0-0.1, TP07-0.3-0.4, TP08-0.4-0.5, TP09-0.5-0.6, TP14-0.0-0.1	18-Apr-2023	24-Apr-2023	02-May-2023	✔	26-Apr-2023	02-May-2023	✔
Soil Glass Jar - Unpreserved (EP080) TP14-0.3-0.4, TP15-0.3-0.4, TP16-0.2-0.3, TP18-0.0-0.1, TP20-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP19-0.3-0.4, TP21-0.0-0.1, TP22-0.2-0.3	18-Apr-2023	24-Apr-2023	02-May-2023	✔	27-Apr-2023	02-May-2023	✔
Soil Glass Jar - Unpreserved (EP080) TP01-0.0-0.1, TP02-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP13-0.2-0.3, DUP01, TP01-0.2-0.3, TP03-0.0-0.1, TP07-0.3-0.4, TP08-0.4-0.5, TP09-0.5-0.6, TP14-0.0-0.1, DUP02	18-Apr-2023	26-Apr-2023	02-May-2023	✔	27-Apr-2023	02-May-2023	✔
Soil Glass Jar - Unpreserved (EP071) TP14-0.3-0.4	18-Apr-2023	27-Apr-2023	02-May-2023	✔	27-Apr-2023	06-Jun-2023	✔
Soil Glass Jar - Unpreserved (EP071) TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP19-0.3-0.4, TP21-0.0-0.1, TP22-0.2-0.3, DUP01, TP15-0.3-0.4, TP16-0.2-0.3, TP18-0.0-0.1, TP20-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, DUP02	18-Apr-2023	27-Apr-2023	02-May-2023	✔	28-Apr-2023	06-Jun-2023	✔
Soil Glass Jar - Unpreserved (EP080) TP04-0.0-0.1, TP06-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP05-0.0-0.1, TP10-0.0-0.1, TP11-0.1-0.2, TP13-0.0-0.1	19-Apr-2023	24-Apr-2023	03-May-2023	✔	26-Apr-2023	03-May-2023	✔
Soil Glass Jar - Unpreserved (EP080) TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	24-Apr-2023	03-May-2023	✔	27-Apr-2023	03-May-2023	✔
Soil Glass Jar - Unpreserved (EP080)							



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
TP04-0.0-0.1, TP06-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP08-A-0.5-0.6,	TP05-0.0-0.1, TP10-0.0-0.1, TP11-0.1-0.2, TP13-0.0-0.1, TP08-C-0.4-0.5	19-Apr-2023	26-Apr-2023	03-May-2023	✔	27-Apr-2023	03-May-2023	✔
Soil Glass Jar - Unpreserved (EP071) TP24-0.0-0.1, TP08-A-0.5-0.6,	TP25-0.0-0.1, TP08-C-0.4-0.5	19-Apr-2023	27-Apr-2023	03-May-2023	✔	28-Apr-2023	06-Jun-2023	✔
Soil Glass Jar - Unpreserved (EP080) HA01-0.0-0.1, HA03-0.1-0.2, HA05-0.2-0.3	HA02-0.0-0.1, HA04-0.1-0.2,	20-Apr-2023	24-Apr-2023	04-May-2023	✔	27-Apr-2023	04-May-2023	✔
Soil Glass Jar - Unpreserved (EP080) HA06-0.2-0.3, HA08-0.1-0.2, HA10-0.0-0.1, HA11-0.1-0.2	HA07-0.0-0.1, HA09-0.1-0.2, HA10-0.2-0.3,	20-Apr-2023	26-Apr-2023	04-May-2023	✔	26-Apr-2023	04-May-2023	✔
Soil Glass Jar - Unpreserved (EP080) HA12-0.1-0.2, HA14-0.1-0.2,	HA13-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	26-Apr-2023	04-May-2023	✔	27-Apr-2023	04-May-2023	✔
Soil Glass Jar - Unpreserved (EP071) HA01-0.0-0.1, HA03-0.1-0.2, HA05-0.2-0.3, HA07-0.0-0.1, HA09-0.1-0.2, HA10-0.2-0.3, HA12-0.1-0.2, HA14-0.1-0.2,	HA02-0.0-0.1, HA04-0.1-0.2, HA06-0.2-0.3, HA08-0.1-0.2, HA10-0.0-0.1, HA11-0.1-0.2, HA13-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	27-Apr-2023	04-May-2023	✔	28-Apr-2023	06-Jun-2023	✔



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080) Trip Spike - 17, Trip Spike Control - 17	Trip Blank,	11-Apr-2023	24-Apr-2023	25-Apr-2023	✓	24-Apr-2023	25-Apr-2023	✓
Soil Glass Jar - Unpreserved (EP080) TP01-0.0-0.1, TP02-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP13-0.2-0.3,	TP01-0.2-0.3, TP03-0.0-0.1, TP07-0.3-0.4, TP08-0.4-0.5, TP09-0.5-0.6, TP14-0.0-0.1	18-Apr-2023	24-Apr-2023	02-May-2023	✓	26-Apr-2023	02-May-2023	✓
Soil Glass Jar - Unpreserved (EP080) TP14-0.3-0.4, TP15-0.3-0.4, TP16-0.2-0.3, TP18-0.0-0.1, TP20-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1	TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP19-0.3-0.4, TP21-0.0-0.1, TP22-0.2-0.3,	18-Apr-2023	24-Apr-2023	02-May-2023	✓	27-Apr-2023	02-May-2023	✓
Soil Glass Jar - Unpreserved (EP080) DUP01,	DUP02	18-Apr-2023	26-Apr-2023	02-May-2023	✓	27-Apr-2023	02-May-2023	✓
Soil Glass Jar - Unpreserved (EP080) TP04-0.0-0.1, TP06-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1,	TP05-0.0-0.1, TP10-0.0-0.1, TP11-0.1-0.2, TP13-0.0-0.1	19-Apr-2023	24-Apr-2023	03-May-2023	✓	26-Apr-2023	03-May-2023	✓
Soil Glass Jar - Unpreserved (EP080) TP24-0.0-0.1,	TP25-0.0-0.1	19-Apr-2023	24-Apr-2023	03-May-2023	✓	27-Apr-2023	03-May-2023	✓
Soil Glass Jar - Unpreserved (EP080) TP08-A-0.5-0.6,	TP08-C-0.4-0.5	19-Apr-2023	26-Apr-2023	03-May-2023	✓	27-Apr-2023	03-May-2023	✓
Soil Glass Jar - Unpreserved (EP080) HA01-0.0-0.1, HA03-0.1-0.2, HA05-0.2-0.3	HA02-0.0-0.1, HA04-0.1-0.2,	20-Apr-2023	24-Apr-2023	04-May-2023	✓	27-Apr-2023	04-May-2023	✓
Soil Glass Jar - Unpreserved (EP080) HA06-0.2-0.3, HA08-0.1-0.2, HA10-0.0-0.1, HA11-0.1-0.2	HA07-0.0-0.1, HA09-0.1-0.2, HA10-0.2-0.3,	20-Apr-2023	26-Apr-2023	04-May-2023	✓	26-Apr-2023	04-May-2023	✓
Soil Glass Jar - Unpreserved (EP080) HA12-0.1-0.2, HA14-0.1-0.2,	HA13-0.1-0.2, HA15-0.1-0.2	20-Apr-2023	26-Apr-2023	04-May-2023	✓	27-Apr-2023	04-May-2023	✓



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X) TP01-0.0-0.1, TP02-0.0-0.1, TP03-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP14-0.0-0.1, TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP18-0.0-0.1, TP19-0.0-0.1, TP20-0.0-0.1, TP21-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, DUP01, DUP02	18-Apr-2023	26-Apr-2023	15-Oct-2023	✔	28-Apr-2023	05-Jun-2023	✔	
HDPE Soil Jar (EP231X) TP04-0.0-0.1, TP05-0.0-0.1, TP06-0.0-0.1, TP10-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	26-Apr-2023	16-Oct-2023	✔	28-Apr-2023	05-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP231X) HA14-0.1-0.2	20-Apr-2023	26-Apr-2023	17-Oct-2023	✔	28-Apr-2023	05-Jun-2023	✔	
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231X) TP01-0.0-0.1, TP02-0.0-0.1, TP03-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP14-0.0-0.1, TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP18-0.0-0.1, TP19-0.0-0.1, TP20-0.0-0.1, TP21-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, DUP01, DUP02	18-Apr-2023	26-Apr-2023	15-Oct-2023	✔	28-Apr-2023	05-Jun-2023	✔	
HDPE Soil Jar (EP231X) TP04-0.0-0.1, TP05-0.0-0.1, TP06-0.0-0.1, TP10-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	26-Apr-2023	16-Oct-2023	✔	28-Apr-2023	05-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP231X) HA14-0.1-0.2	20-Apr-2023	26-Apr-2023	17-Oct-2023	✔	28-Apr-2023	05-Jun-2023	✔	



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE Soil Jar (EP231X) TP01-0.0-0.1, TP02-0.0-0.1, TP03-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP14-0.0-0.1, TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP18-0.0-0.1, TP19-0.0-0.1, TP20-0.0-0.1, TP21-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, DUP01, DUP02	18-Apr-2023	26-Apr-2023	15-Oct-2023	✔	28-Apr-2023	05-Jun-2023	✔	
HDPE Soil Jar (EP231X) TP04-0.0-0.1, TP05-0.0-0.1, TP06-0.0-0.1, TP10-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	26-Apr-2023	16-Oct-2023	✔	28-Apr-2023	05-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP231X) HA14-0.1-0.2	20-Apr-2023	26-Apr-2023	17-Oct-2023	✔	28-Apr-2023	05-Jun-2023	✔	
EP231P: PFAS Sums								
HDPE Soil Jar (EP231X) TP01-0.0-0.1, TP02-0.0-0.1, TP03-0.0-0.1, TP07-0.0-0.1, TP08-0.0-0.1, TP09-0.0-0.1, TP14-0.0-0.1, TP15-0.0-0.1, TP16-0.0-0.1, TP17-0.0-0.1, TP18-0.0-0.1, TP19-0.0-0.1, TP20-0.0-0.1, TP21-0.0-0.1, TP22-0.0-0.1, TP23-0.0-0.1, DUP01, DUP02	18-Apr-2023	26-Apr-2023	15-Oct-2023	✔	28-Apr-2023	05-Jun-2023	✔	
HDPE Soil Jar (EP231X) TP04-0.0-0.1, TP05-0.0-0.1, TP06-0.0-0.1, TP10-0.0-0.1, TP11-0.0-0.1, TP12-0.0-0.1, TP24-0.0-0.1, TP25-0.0-0.1	19-Apr-2023	26-Apr-2023	16-Oct-2023	✔	28-Apr-2023	05-Jun-2023	✔	
Soil Glass Jar - Unpreserved (EP231X) HA14-0.1-0.2	20-Apr-2023	26-Apr-2023	17-Oct-2023	✔	28-Apr-2023	05-Jun-2023	✔	

Matrix: **SOLID**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200) TP08-A-FC01	19-Apr-2023	----	----	----	26-Apr-2023	16-Oct-2023	✔



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) Rinsate 2	20-Apr-2023	26-Apr-2023	17-Oct-2023	✓	26-Apr-2023	17-Oct-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) Rinsate 2	20-Apr-2023	----	----	----	28-Apr-2023	18-May-2023	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066) Rinsate 2	20-Apr-2023	26-Apr-2023	27-Apr-2023	✓	28-Apr-2023	05-Jun-2023	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) Rinsate 2	20-Apr-2023	26-Apr-2023	27-Apr-2023	✓	28-Apr-2023	05-Jun-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) Rinsate 2	20-Apr-2023	26-Apr-2023	27-Apr-2023	✓	28-Apr-2023	05-Jun-2023	✓
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM)) Rinsate 2	20-Apr-2023	26-Apr-2023	27-Apr-2023	✓	28-Apr-2023	05-Jun-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) Rinsate 2	20-Apr-2023	26-Apr-2023	27-Apr-2023	✓	28-Apr-2023	05-Jun-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) Rinsate 2	20-Apr-2023	26-Apr-2023	27-Apr-2023	✓	28-Apr-2023	05-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) Rinsate 2	20-Apr-2023	27-Apr-2023	04-May-2023	✓	27-Apr-2023	04-May-2023	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) Rinsate 2	20-Apr-2023	26-Apr-2023	27-Apr-2023	✓	28-Apr-2023	05-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) Rinsate 2	20-Apr-2023	27-Apr-2023	04-May-2023	✓	27-Apr-2023	04-May-2023	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) Rinsate 2	20-Apr-2023	27-Apr-2023	04-May-2023	✓	27-Apr-2023	04-May-2023	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Buchi Ammonia	EK055	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	7	71	9.86	10.00	✗	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	3	8	37.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N - Soluble by Discrete Analyser	EK057G	3	8	37.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	6	60	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	33	12.12	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	6	60	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	6	60	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-Soluble By Discrete Analyser	EK071G	3	5	60.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	6	16.67	9.52	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	7	56	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	7	56	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser	EK067G	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	6	60	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	8	80	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Buchi Ammonia	EK055	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	3	8	37.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N - Soluble by Discrete Analyser	EK057G	3	8	37.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	33	6.06	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-Soluble By Discrete Analyser	EK071G	3	5	60.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	3	6	50.00	14.29	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	56	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	56	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser	EK067G	3	5	60.00	15.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	80	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Buchi Ammonia	EK055	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	3	8	37.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification .

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
Nitrite as N - Soluble by Discrete Analyser	EK057G	3	8	37.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	33	6.06	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-Soluble By Discrete Analyser	EK071G	3	5	60.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	6	16.67	4.76	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	56	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	56	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser	EK067G	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	80	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Buchi Ammonia	EK055	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NO _x) - Soluble by Discrete Analyser	EK059G	3	8	37.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N - Soluble by Discrete Analyser	EK057G	3	8	37.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	33	6.06	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-Soluble By Discrete Analyser	EK071G	3	5	60.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	6	16.67	4.76	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	56	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	56	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus By Discrete Analyser	EK067G	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	80	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification .

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	5	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	6	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	14	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	8	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification .

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	5	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	8	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Buchi Ammonia	EK055	SOIL	In house: Referenced to APHA 4500-NH ₃ B&G, H Samples are steam distilled (Buchi) prior to analysis and quantified using titration, FIA or Discrete Analyser.
Nitrite as N - Soluble by Discrete Analyser	EK057G	SOIL	In house: Referenced to APHA 4500-NO ₃ - B. Nitrite in a water extract is determined by direct colourimetry by Discrete Analyser.
Nitrate as N - Soluble by Discrete Analyser	EK058G	SOIL	In house: Referenced to APHA 4500-NO ₃ - F. Nitrate in the 1:5 soil:water extract is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results.
Nitrite and Nitrate as N (NO _x)- Soluble by Discrete Analyser	EK059G	SOIL	In house: Thermo Scientific Method D08727 and NEMI (National Environmental Method Index) Method ID: 9171. This method covers the determination of total oxidised nitrogen (NO _x -N) and nitrate (NO ₃ -N) by calculation, Combined oxidised Nitrogen (NO ₂ +NO ₃) in a water extract is determined by direct colourimetry by Discrete Analyser.
TKN as N By Discrete Analyser	EK061G	SOIL	In house: Referenced to APHA 4500-Norg-D Soil samples are digested using Kjeldahl digestion followed by determination by Discrete Analyser.
Total Nitrogen as N (TKN + NO _x) By Discrete Analyser	EK062G	SOIL	In house: Referenced to APHA 4500 Norg/NO ₃ - Total Nitrogen is determined as the sum of TKN and Oxidised Nitrogen, each determined seperately as N.
Total Phosphorus By Discrete Analyser	EK067G	SOIL	In house: Referenced to APHA 4500 P-B&F This procedure involves sulfuric acid digestion and quantification using Discrete Analyser.
Reactive Phosphorus as P-Soluble By Discrete Analyser	EK071G	SOIL	In house: Referenced to APHA 4500 P-F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3).
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).



Analytical Methods	Method	Matrix	Method Descriptions
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Asbestos Identification in Bulk Solids	EA200	SOLID	In house: Referenced to AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)



Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	SOIL	In house: Referenced to APHA 4500 Norg- D; APHA 4500 P - H. Macro Kjeldahl digestion.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of reagent grade water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
QuEChERS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2314312**

Client : **SMEC AUSTRALIA PTY LTD**
Contact : **SAM VAUGHAN**
Address : **Level 5, 20 Berry Street, North Sydney,
NSW 2060
North Sydney 2060**

E-mail : **sam.vaughan@smec.com**
Telephone : **----**
Facsimile : **----**

Project : **SINSW - Austral PS**
Order number : **SINSW AUST 30018043 210.1 BATCH
1 of 1**

C-O-C number : **----**
Site : **----**
Sampler : **HARRISON WOOD**

Laboratory : **Environmental Division Sydney**
Contact : **Katie Davis**
Address : **277-289 Woodpark Road Smithfield
NSW Australia 2164**

E-mail : **katie.davis@alsglobal.com**
Telephone : **+61-2-8784 8555**
Facsimile : **+61-2-8784 8500**

Page : **1 of 3**
Quote number : **ES2021SMEAUS0010 (EN/025/21)**

QC Level : **NEPM 2013 B3 & ALS QC Standard**

Dates

Date Samples Received : **21-Apr-2023 15:00**
Client Requested Due : **09-May-2023**
Date

Issue Date : **02-May-2023**
Scheduled Reporting Date : **09-May-2023**

Delivery Details

Mode of Delivery : **Samples On Hand**
No. of coolers/boxes : **----**
Receipt Detail :

Security Seal : **Not Available**
Temperature : **----**
No. of samples received / analysed : **2 / 2**

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **This is a rebatch of ES2313155.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Clay Content analysis will be conducted by ALS Newcastle.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

Method Sample ID	Sample Container Received	Preferred Sample Container for Analysis
Soil Particle Density : EA152		
EIL-TP10-0.0-0.1	- Snap Lock Bag	- Dried soil
EIL-TP23-0.0-0.1	- Snap Lock Bag	- Dried soil

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - P-22 (WA/SYD) NEPM Screen for Soil Classification WA
ES2314312-001	18-Apr-2023 00:00	EIL-TP10-0.0-0.1	✓	✓
ES2314312-002	18-Apr-2023 00:00	EIL-TP23-0.0-0.1	✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **SOIL**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EA001: pH in soil using a 0.01M CaCl2 extract							
EIL-TP10-0.0-0.1	Soil Glass Jar - Unpreserved	25-Apr-2023	25-Apr-2023	21-Apr-2023	✓	01-May-2023	✗
EIL-TP23-0.0-0.1	Soil Glass Jar - Unpreserved	25-Apr-2023	25-Apr-2023	21-Apr-2023	✓	01-May-2023	✗
EA002: pH (1:5)							
EIL-TP10-0.0-0.1	Soil Glass Jar - Unpreserved	25-Apr-2023	25-Apr-2023	21-Apr-2023	✓	01-May-2023	✗
EIL-TP23-0.0-0.1	Soil Glass Jar - Unpreserved	25-Apr-2023	25-Apr-2023	21-Apr-2023	✓	01-May-2023	✗
EA010: Electrical Conductivity (1:5)							
EIL-TP10-0.0-0.1	Soil Glass Jar - Unpreserved	25-Apr-2023	23-May-2023	21-Apr-2023	✓	01-May-2023	✗
EIL-TP23-0.0-0.1	Soil Glass Jar - Unpreserved	25-Apr-2023	23-May-2023	21-Apr-2023	✓	01-May-2023	✗



CERTIFICATE OF ANALYSIS

Work Order : **ES2314312**
Client : **SMEC AUSTRALIA PTY LTD**
Contact : SAM VAUGHAN
Address : Level 5, 20 Berry Street, North Sydney, NSW 2060
North Sydney 2060
Telephone : ----
Project : SINSW - Austral PS
Order number : SINSW AUST 30018043 210.1 BATCH 1 of 1
C-O-C number : ----
Sampler : HARRISON WOOD
Site : ----
Quote number : EN/025/21
No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 3
Laboratory : Environmental Division Sydney
Contact : Katie Davis
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61-2-8784 8555
Date Samples Received : 21-Apr-2023 15:00
Date Analysis Commenced : 02-May-2023
Issue Date : 09-May-2023 15:09



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EA150H: Soil particle density results fell outside the scope of AS1289.3.6.3. Results should be scrutinised accordingly.
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H⁺ + Al³⁺).



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	EIL-TP10-0.0-0.1	EIL-TP23-0.0-0.1	----	----	----
Sampling date / time					18-Apr-2023 00:00	18-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2314312-001	ES2314312-002	-----	-----	-----
				Result	Result		----	----	----
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit		5.2	5.4	----	----	----
EA002: pH 1:5 (Soils)									
pH Value	----	0.1	pH Unit		6.8	6.4	----	----	----
EA010: Conductivity (1:5)									
Electrical Conductivity @ 25°C	----	1	µS/cm		36	30	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		15.3	33.4	----	----	----
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		32	30	----	----	----
EA152: Soil Particle Density									
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3		2.41	2.13	----	----	----
ED007: Exchangeable Cations									
Exchangeable Calcium	----	0.1	meq/100g		4.9	4.6	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g		6.7	3.5	----	----	----
Exchangeable Potassium	----	0.1	meq/100g		0.3	0.5	----	----	----
Exchangeable Sodium	----	0.1	meq/100g		1.0	0.4	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g		13.0	9.2	----	----	----
Exchangeable Sodium Percent	----	0.1	%		7.9	4.6	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Iron	7439-89-6	0.005	%		3.96	4.78	----	----	----
EP004: Organic Matter									
Organic Matter	----	0.5	%		1.8	1.0	----	----	----
Total Organic Carbon	----	0.5	%		1.0	0.6	----	----	----

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA152: Soil Particle Density



QUALITY CONTROL REPORT

Work Order : **ES2314312**

Client : **SMEC AUSTRALIA PTY LTD**

Contact : **SAM VAUGHAN**

Address : **Level 5, 20 Berry Street, North Sydney, NSW 2060**
North Sydney 2060

Telephone : **----**

Project : **SINSW - Austral PS**

Order number : **SINSW AUST 30018043 210.1 BATCH 1 of 1**

C-O-C number : **----**

Sampler : **HARRISON WOOD**

Site : **----**

Quote number : **EN/025/21**

No. of samples received : **2**

No. of samples analysed : **2**

Page : **1 of 4**

Laboratory : **Environmental Division Sydney**

Contact : **Katie Davis**

Address : **277-289 Woodpark Road Smithfield NSW Australia 2164**

Telephone : **+61-2-8784 8555**

Date Samples Received : **21-Apr-2023**

Date Analysis Commenced : **02-May-2023**

Issue Date : **09-May-2023**



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Vincent Emerton-Bell	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5031286)									
ES2314091-001	Anonymous	EG005T: Iron	7439-89-6	50	mg/kg	12900	12000	7.6	0% - 20%
ES2314091-023	Anonymous	EG005T: Iron	7439-89-6	50	mg/kg	11300	12500	9.8	0% - 20%
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 5025078)									
ES2314043-001	Anonymous	EA001: pH (CaCl2)	----	0.1	pH Unit	4.9	4.8	2.1	0% - 20%
EA002: pH 1:5 (Soils) (QC Lot: 5022888)									
ES2314043-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	5.4	5.2	3.0	0% - 20%
EA010: Conductivity (1:5) (QC Lot: 5022889)									
ES2314312-001	EIL-TP10-0.0-0.1	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	36	37	0.0	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5022530)									
ES2314288-001	Anonymous	EA055: Moisture Content	----	0.1	%	19.7	19.3	1.9	0% - 20%
ED007: Exchangeable Cations (QC Lot: 5027717)									
ES2313863-006	Anonymous	ED007: Exchangeable Sodium Percent	----	0.1	%	4.6	4.6	0.0	0% - 20%
		ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	<0.1	0.0	No Limit
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	3.7	3.7	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.2	0.2	0.0	No Limit
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.2	0.2	0.0	No Limit
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	4.1	4.1	0.0	0% - 20%
EW2301928-001	Anonymous	ED007: Exchangeable Sodium Percent	----	0.1	%	3.5	3.5	0.0	0% - 20%
		ED007: Exchangeable Calcium	----	0.1	meq/100g	1.4	1.4	0.0	0% - 50%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	0.8	0.8	0.0	No Limit
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.3	0.3	0.0	No Limit
		ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	<0.1	0.0	No Limit
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	2.6	2.6	0.0	0% - 20%



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP004: Organic Matter (QC Lot: 5028356)									
ES2314312-001	EIL-TP10-0.0-0.1	EP004: Organic Matter	----	0.5	%	1.8	1.7	0.0	No Limit
		EP004: Total Organic Carbon	----	0.5	%	1.0	1.0	0.0	No Limit



Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5031286)								
EG005T: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	93.5	89.0	112
EA002: pH 1:5 (Soils) (QCLot: 5022888)								
EA002: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	99.4	98.8	101
EA010: Conductivity (1:5) (QCLot: 5022889)								
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	101	92.0	108
ED007: Exchangeable Cations (QCLot: 5027717)								
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	1 meq/100g	96.0	75.8	120
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	1.67 meq/100g	101	74.9	115
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	0.51 meq/100g	108	80.0	120
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	0.87 meq/100g	96.6	80.0	120
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----
ED007: Exchangeable Sodium Percent	----	0.1	%	<0.1	----	----	----	----
EP004: Organic Matter (QCLot: 5028356)								
EP004: Organic Matter	----	0.5	%	<0.5	2.53 %	83.4	82.0	98.0
EP004: Total Organic Carbon	----	0.5	%	<0.5	1.46 %	83.6	81.0	99.0

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%) MS	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number			Low	High
EP004: Organic Matter (QCLot: 5028356)							
ES2314312-001	EIL-TP10-0.0-0.1	EP004: Organic Matter	----	1 %	72.6	70.0	130
		EP004: Total Organic Carbon	----	0.58 %	72.9	70.0	130



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2314312	Page	: 1 of 5
Client	: SMEC AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: SAM VAUGHAN	Telephone	: +61-2-8784 8555
Project	: SINSW - Austral PS	Date Samples Received	: 21-Apr-2023
Site	: ----	Issue Date	: 09-May-2023
Sampler	: HARRISON WOOD	No. of samples received	: 2
Order number	: SINSW AUST 30018043 210.1 BATCH 1 of 1	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis		
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis
EA001: pH in soil using 0.01M CaCl extract						
Soil Glass Jar - Unpreserved	EIL-TP10-0.0-0.1, EIL-TP23-0.0-0.1	03-May-2023	25-Apr-2023	8	----	----
EA002: pH 1:5 (Soils)						
Soil Glass Jar - Unpreserved	EIL-TP10-0.0-0.1, EIL-TP23-0.0-0.1	03-May-2023	25-Apr-2023	8	----	----
EA010: Conductivity (1:5)						
Soil Glass Jar - Unpreserved	EIL-TP10-0.0-0.1, EIL-TP23-0.0-0.1	03-May-2023	25-Apr-2023	8	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	0				
Matrix Spikes (MS)					
Total Metals by ICP-AES	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA001: pH in soil using 0.01M CaCl extract							
Soil Glass Jar - Unpreserved (EA001) EIL-TP10-0.0-0.1, EIL-TP23-0.0-0.1	18-Apr-2023	03-May-2023	25-Apr-2023	✖	03-May-2023	03-May-2023	✓
EA002: pH 1:5 (Soils)							
Soil Glass Jar - Unpreserved (EA002) EIL-TP10-0.0-0.1, EIL-TP23-0.0-0.1	18-Apr-2023	03-May-2023	25-Apr-2023	✖	03-May-2023	03-May-2023	✓
EA010: Conductivity (1:5)							
Soil Glass Jar - Unpreserved (EA010) EIL-TP10-0.0-0.1, EIL-TP23-0.0-0.1	18-Apr-2023	03-May-2023	25-Apr-2023	✖	03-May-2023	31-May-2023	✓



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055) EIL-TP10-0.0-0.1, EIL-TP23-0.0-0.1	18-Apr-2023	----	----	----	02-May-2023	02-May-2023	✓	
EA150: Soil Classification based on Particle Size								
Snap Lock Bag (EA150H) EIL-TP10-0.0-0.1, EIL-TP23-0.0-0.1	18-Apr-2023	----	----	----	08-May-2023	15-Oct-2023	✓	
EA152: Soil Particle Density								
Snap Lock Bag (EA152) EIL-TP10-0.0-0.1, EIL-TP23-0.0-0.1	18-Apr-2023	----	----	----	08-May-2023	15-Oct-2023	✓	
ED007: Exchangeable Cations								
Soil Glass Jar - Unpreserved (ED007) EIL-TP10-0.0-0.1, EIL-TP23-0.0-0.1	18-Apr-2023	04-May-2023	16-May-2023	✓	04-May-2023	16-May-2023	✓	
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) EIL-TP10-0.0-0.1, EIL-TP23-0.0-0.1	18-Apr-2023	08-May-2023	15-Oct-2023	✓	09-May-2023	15-Oct-2023	✓	
EP004: Organic Matter								
Soil Glass Jar - Unpreserved (EP004) EIL-TP10-0.0-0.1, EIL-TP23-0.0-0.1	18-Apr-2023	05-May-2023	16-May-2023	✓	05-May-2023	16-May-2023	✓	



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Electrical Conductivity (1:5)	EA010	1	2	50.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	1	7	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	4	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	2	100.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Electrical Conductivity (1:5)	EA010	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	2	6	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Electrical Conductivity (1:5)	EA010	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Organic Matter	EP004	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	0	2	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001	SOIL	In house: Referenced to Rayment and Lyons 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
pH (1:5)	EA002	SOIL	In house: Referenced to Rayment and Lyons 4A1 and APHA 4500H+. pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM Schedule B(3).
Electrical Conductivity (1:5)	EA010	SOIL	In house: Referenced to Rayment and Lyons 3A1 and APHA 2510. Conductivity is determined on soil samples using a 1:5 soil/water leach. This method is compliant with NEPM Schedule B(3).
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Soil Particle Density	EA152	SOIL	Soil Particle Density by AS 1289.3.5.1: Methods of testing soils for engineering purposes - Soil classification tests - Determination of the soil particle density of a soil - Standard method
Exchangeable Cations	ED007	SOIL	In house: Referenced to Rayment & Lyons Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Organic Matter	EP004	SOIL	In house: Referenced to AS1289.4.1.1. Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001-PR	SOIL	In house: Referenced to Rayment and Lyons 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
Exchangeable Cations Preparation Method	ED007PR	SOIL	In house: Referenced to Rayment & Lyons method 15A1. A 1M NH ₄ Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of reagent grade water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Organic Matter	EP004-PR	SOIL	In house: Referenced to AS1289.4.1.1. Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM Schedule B(3).



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2312740**

Client	: SMEC AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: SAM VAUGHAN	Contact	: Katie Davis
Address	: Level 5, 20 Berry Street, North Sydney, NSW 2060 North Sydney 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: sam.vaughan@smec.com	E-mail	: katie.davis@alsglobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: 30018043 AUSTRAL PS DSI	Page	: 1 of 2
Order number	: ----	Quote number	: ES2021SMEAUS0010 (EN/025/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: HARRISON WOOD		

Dates

Date Samples Received	: 18-Apr-2023 17:20	Issue Date	: 19-Apr-2023
Client Requested Due Date	: 20-Apr-2023	Scheduled Reporting Date	: 20-Apr-2023

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Intact.
No. of coolers/boxes	: ----	Temperature	: 22.9°C
Receipt Detail	: BAG	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- ### Summary of Sample(s) and Requested Analysis

Matrix: **SOLID**

SOLID - EA200B
Asbestos Identification in Bulk Solids (Excluding

Sample(s) have been received within the recommended holding times for the requested analysis.

ACCOUNTS INVOICES

- Email accounts.payable@smec.com

[illegible][illegible]



CERTIFICATE OF ANALYSIS

Work Order : **ES2312740**
Client : **SMEC AUSTRALIA PTY LTD**
Contact : SAM VAUGHAN
Address : Level 5, 20 Berry Street, North Sydney, NSW 2060
North Sydney 2060
Telephone : ----
Project : 30018043 AUSTRAL PS DSI
Order number : ----
C-O-C number : ----
Sampler : HARRISON WOOD
Site : ----
Quote number : EN/025/21
No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 3
Laboratory : Environmental Division Sydney
Contact : Katie Davis
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61-2-8784 8555
Date Samples Received : 18-Apr-2023 17:20
Date Analysis Commenced : 19-Apr-2023
Issue Date : 19-Apr-2023 17:57



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories

Position

Accreditation Category

Christopher Owler

Team Leader - Asbestos

Newcastle - Asbestos, Mayfield West, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 ^ = This result is computed from individual analyte detections at or above the level of reporting
 ø = ALS is not NATA accredited for these tests.
 ~ = Indicates an estimated value.

- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend**
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Analysis of asbestos from swabs and tapes is not covered under the current scope of NATA accreditation.
- EA200: N/A - Not Applicable

Analytical Results

Sub-Matrix: SOLID
 (Matrix: SOLID)

Sample ID

				TP08-FC01	TP08-FC02	----	----	----
Sampling date / time				18-Apr-2023 00:00	18-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2312740-001	ES2312740-002	-----	-----	-----
				Result	Result	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	Yes	Yes	----	----	----
Asbestos Type	1332-21-4	-	--	Ch + Am	Ch + Am	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	N/A	N/A	----	----	----
Sample weight (dry)	----	0.01	g	31.5	3.86	----	----	----
Synthetic Mineral Fibre	----	-	-	No	No	----	----	----
Organic Fibre	----	-	-	Yes	Yes	----	----	----
APPROVED IDENTIFIER:	----	-	--	J. WILLIAMS	J. WILLIAMS	----	----	----



Analytical Results

Descriptive Results

Sub-Matrix: **SOLID**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	TP08-FC01 - 18-Apr-2023 00:00	Two pieces of asbestos cement sheeting approximately 70 x 60 x 5mm.
EA200: Description	TP08-FC02 - 18-Apr-2023 00:00	Two pieces of asbestos cement sheeting approximately 30 x 20 x 5mm.

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).
(SOLID) EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples



QUALITY CONTROL REPORT

Work Order : **ES2312740**

Client : **SMEC AUSTRALIA PTY LTD**

Contact : **SAM VAUGHAN**

Address : **Level 5, 20 Berry Street, North Sydney, NSW 2060**
North Sydney 2060

Telephone : **----**

Project : **30018043 AUSTRAL PS DSI**

Order number : **----**

C-O-C number : **----**

Sampler : **HARRISON WOOD**

Site : **----**

Quote number : **EN/025/21**

No. of samples received : **2**

No. of samples analysed : **2**

Page : **1 of 3**

Laboratory : **Environmental Division Sydney**

Contact : **Katie Davis**

Address : **277-289 Woodpark Road Smithfield NSW Australia 2164**

Telephone : **+61-2-8784 8555**

Date Samples Received : **18-Apr-2023**

Date Analysis Commenced : **19-Apr-2023**

Issue Date : **19-Apr-2023**



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :
Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**
-



Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

- **No Method Blank (MB) or Laboratory Control Spike (LCS) Results are required to be reported.**

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**
-



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2312740	Page	: 1 of 4
Client	: SMEC AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: SAM VAUGHAN	Telephone	: +61-2-8784 8555
Project	: 30018043 AUSTRAL PS DSI	Date Samples Received	: 18-Apr-2023
Site	: ----	Issue Date	: 19-Apr-2023
Sampler	: HARRISON WOOD	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOLID**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200) TP08-FC01, TP08-FC02	18-Apr-2023	----	----	----	19-Apr-2023	15-Oct-2023	✔



Quality Control Parameter Frequency Compliance

- No Quality Control data available for this section.



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Asbestos Identification in Bulk Solids	EA200	SOLID	In house: Referenced to AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 Tel: +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 Tel: +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 Tel: +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 Tel: +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarrie QLD 4172 Tel: +61 7 3902 4600 NATA# 1261 Site# 20794	1/2 Frost Drive Mayfield West NSW 2304 Tel: +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289

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ABN: 91 05 0159 898

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Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Christchurch
35 O'Rourke Road Penrose, Auckland 1061 Tel: +64 9 526 45 51 IANZ# 1327	43 Detroit Drive Rolleston, Christchurch 7675 Tel: 0800 856 450 IANZ# 1290

Sample Receipt Advice

Company name:	SMEC Australia Pty Ltd (SYD)
Contact name:	Sam Vaughan
Project name:	SINSW - AUSTRAL PS
Project ID:	SINSW AUST 30018043 210.1 BATCH 1 OF 1
Turnaround time:	5 Day
Date/Time received	Apr 24, 2023 2:23 PM
Eurofins reference	983682

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 3.1 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Hannah Mawbey on phone : or by email: HannahMawbey@eurofins.com

Results will be delivered electronically via email to Sam Vaughan - sam.vaughan@smec.com.

Note: A copy of these results will also be delivered to the general SMEC Australia Pty Ltd (SYD) email address.



web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

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NATA# 1261
Site# 25079 & 25289

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IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: SMEC Australia Pty Ltd (SYD)

Address: Level 6, 76 Berry Street
North Sydney
NSW 2060

Project Name: SINSW - AUSTRAL PS

Project ID: SINSW AUST 30018043 210.1 BATCH 1 OF 1

Order No.:

Report #: 983682

Phone: 02 9925 5555

Fax: 02 9925 5566

Received:

Apr 24, 2023 2:23 PM

Due:

May 2, 2023

Priority:

5 Day

Contact Name:

Sam Vaughan

Eurofins Analytical Services Manager : Hannah Mawbey

Sample Detail

Polychlorinated Biphenyls

Moisture Set

Eurofins Suite B10:
BTEX/TRH/PAH/OC/POP

Per- and Polyfluoroalkyl Substances (PFASs)
- Short Trace

Sydney Laboratory - NATA # 1261 Site # 18217

Brisbane Laboratory - NATA # 1261 Site # 20794

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	DUP01A	Apr 18, 2023		Soil	S23-Ap0052383	X	X	X	X
Test Counts						1	1	1	1

SMEC Australia Pty Ltd
Level 6, 76 Berry Street
North Sydney
NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: **Sam Vaughan**

Report **983682-S**
Project name **SINSW - AUSTRAL PS**
Project ID **SINSW AUST 30018043 210.1 BATCH 1 OF 1**
Received Date **Apr 24, 2023**

Client Sample ID			DUP01A
Sample Matrix			Soil
Eurofins Sample No.			S23- Ap0052383
Date Sampled			Apr 18, 2023
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	130
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5

Client Sample ID			DUP01A
Sample Matrix			Soil
Eurofins Sample No.			S23- Ap0052383
Date Sampled			Apr 18, 2023
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	88
p-Terphenyl-d14 (surr.)	1	%	81
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05
α-HCH	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
β-HCH	0.05	mg/kg	< 0.05
δ-HCH	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
γ-HCH (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	0.5	mg/kg	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchloroendate (surr.)	1	%	101
Tetrachloro-m-xylene (surr.)	1	%	82
Organophosphorus Pesticides			
Azinphos-methyl	0.2	mg/kg	< 0.2
Bolstar	0.2	mg/kg	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2
Coumaphos	2	mg/kg	< 2
Demeton-S	0.2	mg/kg	< 0.2
Demeton-O	0.2	mg/kg	< 0.2
Diazinon	0.2	mg/kg	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2

Client Sample ID			DUP01A
Sample Matrix			Soil
Eurofins Sample No.			S23- Ap0052383
Date Sampled			Apr 18, 2023
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Dimethoate	0.2	mg/kg	< 0.2
Disulfoton	0.2	mg/kg	< 0.2
EPN	0.2	mg/kg	< 0.2
Ethion	0.2	mg/kg	< 0.2
Ethoprop	0.2	mg/kg	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2
Fenthion	0.2	mg/kg	< 0.2
Malathion	0.2	mg/kg	< 0.2
Merphos	0.2	mg/kg	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2
Mevinphos	0.2	mg/kg	< 0.2
Monocrotophos	2	mg/kg	< 2
Naled	0.2	mg/kg	< 0.2
Omethoate	2	mg/kg	< 2
Phorate	0.2	mg/kg	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2
Ronnel	0.2	mg/kg	< 0.2
Terbufos	0.2	mg/kg	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2
Tokuthion	0.2	mg/kg	< 0.2
Trichloronate	0.2	mg/kg	< 0.2
Triphenylphosphate (surr.)	1	%	94
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	101
Tetrachloro-m-xylene (surr.)	1	%	82
Heavy Metals			
Arsenic	2	mg/kg	7.4
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	11
Copper	5	mg/kg	17
Lead	5	mg/kg	19
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	6.0
Zinc	5	mg/kg	110
Sample Properties			
% Moisture	1	%	22

Client Sample ID			DUP01A
Sample Matrix			Soil
Eurofins Sample No.			S23- Ap0052383
Date Sampled			Apr 18, 2023
Test/Reference	LOR	Unit	
Per- and Polyfluoroalkyl Substances (PFASs) - Short			
1H,1H,2H,2H-perfluorooctanesulfonic acid(6:2 FTSA) ^{N11}	10	ug/kg	< 10
13C2-6:2 FTSA (surr.)	1	%	83
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	5	ug/kg	^{N09} < 5
Perfluorooctanesulfonic acid (PFOS) ^{N11}	5	ug/kg	^{N09} 150
18O2-PFHxS (surr.)	1	%	134
13C8-PFOS (surr.)	1	%	100
Perfluorooctanoic acid (PFOA) ^{N11}	5	ug/kg	< 5
13C8-PFOA (surr.)	1	%	110
Sum (PFHxS + PFOS)*	5	ug/kg	150
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	150
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	150

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Apr 26, 2023	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Apr 26, 2023	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Apr 26, 2023	14 Days
BTEX - Method: LTM-ORG-2010 BTEX and Volatile TRH	Sydney	Apr 26, 2023	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Apr 26, 2023	14 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Apr 26, 2023	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Apr 26, 2023	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 26, 2023	28 Days
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Apr 26, 2023	28 Days
Per- and Polyfluoroalkyl Substances (PFASs) - Short - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Apr 27, 2023	28 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Apr 26, 2023	14 Days

Company Name: SMEC Australia Pty Ltd (SYD)

Address: Level 6, 76 Berry Street
North Sydney
NSW 2060

Project Name: SINSW - AUSTRAL PS

Project ID: SINSW AUST 30018043 210.1 BATCH 1 OF 1

Order No.:

Report #: 983682

Phone: 02 9925 5555

Fax: 02 9925 5566

Received:

Apr 24, 2023 2:23 PM

Due:

Apr 28, 2023

Priority:

3 Day

Contact Name:

Sam Vaughan

Eurofins Analytical Services Manager : Hannah Mawbey

Sample Detail

Sydney Laboratory - NATA # 1261 Site # 18217

Brisbane Laboratory - NATA # 1261 Site # 20794

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	Polychlorinated Biphenyls	Moisture Set	Eurofins Suite B10: BTEX/TRH/PAH/OC/POP	Per- and Polyfluoroalkyl Substances (PFASs) - Short
1	DUP01A	Apr 18, 2023		Soil	S23-Ap0052383	X	X	X	X

Test Counts

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	112			70-130	Pass	
TRH C10-C14	%	77			70-130	Pass	
TRH C6-C10	%	112			70-130	Pass	
TRH >C10-C16	%	73			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	103			70-130	Pass	
Toluene	%	103			70-130	Pass	
Ethylbenzene	%	102			70-130	Pass	
m&p-Xylenes	%	111			70-130	Pass	
o-Xylene	%	108			70-130	Pass	
Xylenes - Total*	%	110			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	87			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	96			70-130	Pass	
Acenaphthylene	%	96			70-130	Pass	
Anthracene	%	98			70-130	Pass	
Benz(a)anthracene	%	90			70-130	Pass	
Benzo(a)pyrene	%	92			70-130	Pass	
Benzo(b&j)fluoranthene	%	90			70-130	Pass	
Benzo(g,h,i)perylene	%	93			70-130	Pass	
Benzo(k)fluoranthene	%	98			70-130	Pass	
Chrysene	%	93			70-130	Pass	
Dibenz(a,h)anthracene	%	89			70-130	Pass	
Fluoranthene	%	96			70-130	Pass	
Fluorene	%	95			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	86			70-130	Pass	
Naphthalene	%	96			70-130	Pass	
Phenanthrene	%	89			70-130	Pass	
Pyrene	%	96			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Organochlorine Pesticides							
Chlordanes - Total	%	84			70-130	Pass	
4.4'-DDD	%	91			70-130	Pass	
4.4'-DDE	%	88			70-130	Pass	
4.4'-DDT	%	94			70-130	Pass	
a-HCH	%	81			70-130	Pass	
Aldrin	%	86			70-130	Pass	
b-HCH	%	82			70-130	Pass	
d-HCH	%	83			70-130	Pass	
Dieldrin	%	79			70-130	Pass	
Endosulfan I	%	82			70-130	Pass	
Endosulfan II	%	86			70-130	Pass	
Endosulfan sulphate	%	84			70-130	Pass	
Endrin	%	94			70-130	Pass	
Endrin aldehyde	%	78			70-130	Pass	
Endrin ketone	%	84			70-130	Pass	
g-HCH (Lindane)	%	88			70-130	Pass	
Heptachlor	%	91			70-130	Pass	
Heptachlor epoxide	%	82			70-130	Pass	
Hexachlorobenzene	%	83			70-130	Pass	
Methoxychlor	%	92			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	128			70-130	Pass	
Dimethoate	%	121			70-130	Pass	
Ethion	%	121			70-130	Pass	
Fenitrothion	%	118			70-130	Pass	
Methyl parathion	%	108			70-130	Pass	
Mevinphos	%	117			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	89			70-130	Pass	
Aroclor-1260	%	91			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	97			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Chromium	%	93			80-120	Pass	
Copper	%	92			80-120	Pass	
Lead	%	86			80-120	Pass	
Mercury	%	103			80-120	Pass	
Nickel	%	104			80-120	Pass	
Zinc	%	105			80-120	Pass	
LCS - % Recovery							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	103			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	88			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	95			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	94			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S23-Ap0052565	NCP	%	96			70-130	Pass	
TRH C10-C14	N23-Ap0041545	NCP	%	78			70-130	Pass	
TRH C6-C10	S23-Ap0052565	NCP	%	99			70-130	Pass	
TRH >C10-C16	N23-Ap0041545	NCP	%	71			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S23-Ap0052565	NCP	%	92			70-130	Pass	
Toluene	S23-Ap0052565	NCP	%	96			70-130	Pass	
Ethylbenzene	S23-Ap0052565	NCP	%	96			70-130	Pass	
m&p-Xylenes	S23-Ap0052565	NCP	%	111			70-130	Pass	
o-Xylene	S23-Ap0052565	NCP	%	107			70-130	Pass	
Xylenes - Total*	S23-Ap0052565	NCP	%	110			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S23-Ap0050495	NCP	%	89			70-130	Pass	
Acenaphthylene	S23-Ap0050495	NCP	%	85			70-130	Pass	
Anthracene	S23-Ap0050495	NCP	%	87			70-130	Pass	
Benz(a)anthracene	S23-Ap0050495	NCP	%	81			70-130	Pass	
Benzo(a)pyrene	S23-Ap0050495	NCP	%	76			70-130	Pass	
Benzo(b&j)fluoranthene	S23-Ap0050495	NCP	%	72			70-130	Pass	
Benzo(g,h,i)perylene	S23-Ap0050495	NCP	%	71			70-130	Pass	
Benzo(k)fluoranthene	S23-Ap0050495	NCP	%	94			70-130	Pass	
Chrysene	S23-Ap0050495	NCP	%	89			70-130	Pass	
Dibenz(a,h)anthracene	S23-Ap0050495	NCP	%	72			70-130	Pass	
Fluoranthene	S23-Ap0050495	NCP	%	99			70-130	Pass	
Fluorene	S23-Ap0050495	NCP	%	107			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S23-Ap0050495	NCP	%	73			70-130	Pass	
Naphthalene	S23-Ap0050495	NCP	%	104			70-130	Pass	
Phenanthrene	S23-Ap0050495	NCP	%	88			70-130	Pass	
Pyrene	S23-Ap0050495	NCP	%	100			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S23-Ap0050495	NCP	%	76			70-130	Pass	
4,4'-DDD	S23-Ap0050495	NCP	%	79			70-130	Pass	
4,4'-DDE	S23-Ap0050495	NCP	%	87			70-130	Pass	
4,4'-DDT	S23-Ap0050495	NCP	%	70			70-130	Pass	
α-HCH	S23-Ap0050495	NCP	%	76			70-130	Pass	
Dieldrin	S23-Ap0050495	NCP	%	70			70-130	Pass	
Endosulfan I	S23-Ap0050495	NCP	%	70			70-130	Pass	
Endosulfan II	S23-Ap0050495	NCP	%	89			70-130	Pass	
Endrin	S23-Ap0050495	NCP	%	81			70-130	Pass	
Endrin ketone	S23-Ap0050495	NCP	%	86			70-130	Pass	
γ-HCH (Lindane)	S23-Ap0050495	NCP	%	79			70-130	Pass	
Hexachlorobenzene	S23-Ap0050495	NCP	%	88			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S23-Ap0050495	NCP	%	94			70-130	Pass	
Aroclor-1260	S23-Ap0050495	NCP	%	88			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S23-Ap0052014	NCP	%	88			75-125	Pass	
Cadmium	S23-Ap0052014	NCP	%	89			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	S23-Ap0052014	NCP	%	87			75-125	Pass	
Copper	S23-Ap0052014	NCP	%	83			75-125	Pass	
Lead	S23-Ap0052014	NCP	%	87			75-125	Pass	
Mercury	S23-Ap0052014	NCP	%	93			75-125	Pass	
Nickel	S23-Ap0052014	NCP	%	95			75-125	Pass	
Zinc	S23-Ap0052014	NCP	%	80			75-125	Pass	
Spike - % Recovery									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1					
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-Ap0049251	NCP	%	124			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-Ap0049251	NCP	%	NA			50-150	Fail	Q05
Perfluorooctanesulfonic acid (PFOS)	S23-Ap0049251	NCP	%	NA			50-150	Fail	Q05
Perfluorooctanoic acid (PFOA)	S23-Ap0049251	NCP	%	58			50-150	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Ap0050342	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S23-Ap0044157	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S23-Ap0044157	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S23-Ap0044157	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	S23-Ap0050342	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S23-Ap0044157	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S23-Ap0044157	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S23-Ap0044157	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	N23-Ap0042263	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	N23-Ap0042263	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	N23-Ap0042263	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	N23-Ap0042263	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	N23-Ap0042263	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	N23-Ap0042263	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	N23-Ap0042263	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S23-Ap0053754	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4,4'-DDD	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDT	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
g-HCH (Lindane)	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S23-Ap0053754	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S23-Ap0053754	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S23-Ap0053754	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfthion	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S23-Ap0053754	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S23-Ap0053754	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S23-Ap0053754	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S23-Ap0051946	NCP	mg/kg	< 2	2.4	58	30%	Fail
Cadmium	S23-Ap0051946	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S23-Ap0051946	NCP	mg/kg	< 5	5.5	19	30%	Pass
Copper	S23-Ap0051946	NCP	mg/kg	14	16	7.5	30%	Pass
Lead	S23-Ap0051946	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Mercury	S23-Ap0051946	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S23-Ap0051946	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S23-Ap0052383	CP	mg/kg	110	90	17	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	S23-Ap0052383	CP	%	22	22	2.6	30%	Pass

Duplicate								
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-Ap0052383	CP	ug/kg	< 10	< 10	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S23-Ap0052383	CP	ug/kg	< 5	5.0	20	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S23-Ap0052383	CP	ug/kg	150	180	16	30%	Pass
Perfluorooctanoic acid (PFOA)	S23-Ap0052383	CP	ug/kg	< 5	< 5	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Temperature of Chilled samples on receipt	3.1°C
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
Q05	The matrix spike concentration is less than five times the background concentration in the sample - therefore the spike recovery cannot be determined
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Adam Bateup	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic
Jonathon Angell	Senior Analyst-PFAS



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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